

DIRECTORATE OF EDUCATION
GNCT of Delhi, Delhi Government

SUPPORT MATERIAL
(2020-2021)
Class : XII

Physical Education

Under the Guidance of

Ms. Manisha Saxena
Secretary (Education)

Mr. Binay Bhushan
Director (Education)

Dr. Saroj Bala Sain
Addl. DE (School & Exam.)

Coordinators

Mrs. Mukta Soni
DDE (Exam)

Mr. Raj Kumar
OSD (Exam)

Mr. Krishan Kumar
OSD (Exam)

Production Team

Anil Kumar Sharma

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**MANISHA SAXENA
IAS**



सचिव (शिक्षा)
राष्ट्रीय राजधानी क्षेत्र
दिल्ली सरकार
पुराना सचिवालय, दिल्ली-110054
दूरभाष : 23890187 टेलीफैक्स : 23890119

Secretary (Education)
Government of National Capital Territory of Delhi
Old Secretariat, Delhi-110054
Phone : 23890187 Telefax : 23890119
e-mail : secyedu@nic.in

MESSAGE

The importance of adequate practice during examinations can never be overemphasized. I am happy that support material for classes IX to XII has been developed by the Examination Branch of Directorate of Education. This material is the result of immense hard work, co-ordination and cooperation of teachers and group leaders of various schools. The purpose of the support material is to impart ample practice to the students for preparation of examinations. It will enable the students to think analytically & rationally, and test their own capabilities and level of preparation.

The material is based on latest syllabus prepared by the NCERT and adopted by the CBSE for the academic session 2020-21 and covers different levels of difficulty. I expect that Heads of Schools and Teachers will enable and motivate students to utilize this material during zero periods, extra classes and regular classes best to their advantage.

I would like to compliment the team of Examination Branch for their diligent efforts of which made it possible to accomplish this work in time. I also take this opportunity to convey my best wishes to all the students for success in their endeavours.

(Manisha Saxena)

BINAY BHUSHAN, IAS



Director
Education & Sports
Govt. of NCT of Delhi
Old Secretariat, Delhi- 110054
Tel.: 23890172, Fax : 23890355
E-mail : diredu@nic.in
Website : www.edudel.nic.in

D.O. No.

Date :

Dear Students,

Directorate of Education is committed to providing qualitative and best education to all its students. The Directorate is continuously engaged in the endeavor to make available the best study material for uplifting the standard of its students and schools.

Every year, the expert faculty of Directorate reviews and updates Support Material. The expert faculty of different subjects incorporates the changes in the material as per the latest amendments made by CBSE to make its students familiar with new approaches and methods so that students do well in the examination.

The book in your hand is the outcome of continuous and consistent efforts of senior teachers of the Directorate. They have prepared and developed this material especially for you. A huge amount of money and time has been spent on it in order to make you updated for annual examination.

Last, but not the least, this is the perfect time for you to build the foundation of your future. I have full faith in you and the capabilities of your teachers. Please make the fullest and best use of this Support Material.


BINAY BHUSHAN
DIRECTOR (EDUCATION)

Dr. (Mrs.) Saroj Bala Sain
Addl. Director of Education
(School / Exam / EVGB/EB/ VOC)



Govt. of NCT of Delhi
Directorate of Education
Old Secretariat, Delhi-110054
Tel.: 23890023, 23890093

D.O. No. PP/Adl.DE(sch)/86
Date : 03-10-2019

I am very much pleased to forward the Support Material for classes IX to XII. Every year, the Support Material of most of the subjects is updated/revised as per the most recent changes made by CBSE. The team of subject experts, officers of Exam Branch, members of Core Academic Unit and teachers from various schools of Directorate has made it possible to make available unsurpassed material to students.

Consistence use of Support Material by the students and teachers will make the year long journey seamless and enjoyable. The main purpose to provide the Support Material for the students of government schools of Directorate is not only to help them to avoid purchasing of expensive material available in the market but also to keep them updated and well prepared for exam. The Support Material has always been a ready to use material, which is matchless and most appropriate.

I would like to congratulate all the Team Members for their tireless, unremitting and valuable contributions and wish all the best to teachers and students.

(Dr. Saroj Bala Sain)
Addl.DE (School/Exam)

DIRECTORATE OF EDUCATION
Govt. of NCT, Delhi

SUPPORT MATERIAL
(2020-2021)

Physical Education
Class : XII
(English Medium)

NOT FOR SALE

PUBLISHED BY : DELHI BUREAU OF TEXTBOOKS

Class XII

Physical Education

Under the guidance of

Sh. Darmander Singh, DDE (Sports)

Team Leader:- Nutan Duggal (SPE) Head Quarter

1. Anamika Singh – Lect. P.E. – GGSSS, West Jyoti Nagar, Delhi.
2. Manoj Kumar Chaudhary – Lect. P.E. S. Co ed SSS ZP Block Pitam Pura, Delhi.
3. Rakesh Mohan Kathari – Lect. P.E. – G.Co.ed S.V. Rampura, , Delhi.
4. Kumkum Aggarwal – Lect. P.E. – SKV G.T.B. Nagar, , Delhi.

भारत का संविधान

भाग 4क

नागरिकों के मूल कर्तव्य

अनुच्छेद 51क

मूल कर्तव्य – भारत के प्रत्येक नागरिक का यह कर्तव्य होगा कि वह –

1. संविधान का पालन करे और उसके आदर्शों, संस्थाओं, राष्ट्र ध्वज और राष्ट्रगान का आदर करें।
2. स्वतंत्रता के लिए हमारे राष्ट्रीय आंदोलन को प्रेरित करने वाले उच्च आदर्शों को हृदय में संजोए रखे और उनका पालन करे।
3. भारत की प्रभुता, एकता और अखंडता की रक्षा करे और उसे अक्षुण्ण रखे।
4. देश की रक्षा करे।
5. भारत के सभी लोगों में समरसता और समान भ्रातृत्व की भावना का निर्माण करे।
6. हमारी सामाजिक संस्कृति की गौरवशाली परंपरा का महत्त्व समझे और उसका निर्माण करे।
7. प्राकृतिक पर्यावरण की रक्षा और उसका संवर्धन करे।
8. वैज्ञानिक दृष्टिकोण और ज्ञानार्जन की भावना का विकास करे।
9. सार्वजनिक संपत्ति को सुरक्षित रखे।
10. व्यक्तिगत एवं सामूहिक गतिविधियों के सभी क्षेत्रों में उत्कर्ष की ओर बढ़ने का सतत प्रयास करे।
11. माता-पिता या संरक्षक द्वारा 6 से 14 वर्ष के बच्चों हेतु प्राथमिक शिक्षा प्रदान करना (86वां संशोधन)।

CONSTITUTION OF INDIA

Part IV A (Article 51 A)

Fundamental Duties

Fundamental Duties : It shall be the duty of every citizen of India —

1. to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
2. to cherish and follow the noble ideals which inspired our national struggle for freedom;
3. to uphold and protect the sovereignty, unity and integrity of India;
4. to defend the country and render national service when called upon to do so;
5. to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
6. to value and preserve the rich heritage of our composite culture;
7. to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures.
8. to develop the scientific temper, humanism and the spirit of inquiry and reform;
9. to safeguard public property and to adjure violence;
10. to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement.
11. who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years.

भारत का संविधान

उद्देशिका

हम, भारत के लोग, भारत को एक (सम्पूर्ण प्रभुत्व—सम्पन्न समाजवादी पंथनिरपेक्ष लोकतंत्रात्मक गणराज्य) बनाने के लिए, तथा उसके समस्त नागरिकों को :

सामाजिक, आर्थिक और राजनैतिक न्याय,

विचार, अभिव्यक्ति, विश्वास, धर्म

और उपासना की स्वतंत्रता,

प्रतिष्ठा और अवसर की समता

प्राप्त करने के लिए,

तथा उन सब में,

व्यक्ति की गरिमा और (राष्ट्र की एकता

और अखंडता) सुनिश्चित करने वाली बंधुता

बढ़ाने के लिए

हम दृढ़संकल्प होकर इस संविधान को आत्मार्पित करते हैं।

THE CONSTITUTION OF INDIA

PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a **(SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC)** and to secure to all its citizens :

JUSTICE, social, economic and political,

LIBERTY of thought, expression, belief, faith and worship,

EQUALITY of status and of opportunity; and to promote among them all

FRATERNITY assuring the dignity of the individual and the **(unity an integrity of the Nation)**;

WE DO HEREBY GIVE TO OURSELVES THIS CONSTITUTION.

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Syllabus of 2020-21 Physical Education

Theory No. of Periods 180

Max. Marks 70

Unit-I : Planning in Sports

- Meaning & Objectives of Planning
- Various Committees & its Responsibilities (pre; during & post)
- Tournament- Knock-Out, League Or Round Robin & Combination
- Procedure To Draw Fixtures- Knock-Out (Bye & Seeding) & League (Staircase & Cyclic)
- Intramural & Extramural - Meaning, Objectives & Its Significance
- Specific Sports Programme (Sports Day, Health Run, Run For Fun, Run For Specific Cause & Run For Unity)

Unit-II : Sports & Nutrition

- Balanced Diet & Nutrition : Macro & Micro Nutrients
- Nutritive & Non-Nutritive Components Of Diet
- Eating For Weight Control- A Healthy Weight, The Pitfalls Of Dieting, Food Intolerance & Food Myths

Unit-III : Yoga & Lifestyle

- Asanas as preventive measures
- Obesity : Procedure, Benefits & contraindications for Vajrasana, Hastasana, Trikonasana, Ardh Matsyendrasana
- Diabetes : Procedure, Benefits & contraindications for Sukhasana, Chakrasana, Gomukhasana, Parvatasana, Bhujangasana, Paschimottasana, Matsyasana
- Asthma : Procedure, Benefits and Contraindications for Sukhasana, Chakrasana, Gomukhasana, Parvatasana, Bhujangasana, Paschimottasana, Matsyasana
- Hypertension : Tadasana, Vajrasana, Pawanuktasana, Ardh Chakrasana, Bhujangasana, Shalabhasana
- Back Pain : Tadasana, Ardh Matsyendrasana, Vakrasana, Shalabhasana, Bhujangasana

Unit-IV : Physical Education & Sports for (WSN Children with special Needs-Divyang)

- Concept of Disability & Disorder
- Types of Disability, its causes & nature (cognitive disability, intellectual disability, physical disability)
- Types of Disorder, its cause & nature (ADHD, SPD, ASD, ODD, OCD)
- Disability Etiquettes
- Advantage of Physical Activities for children with special needs

- Strategies to make Physical Activities assessable for children with special need.

Unit-V : Children & Women in Sports

- Motor development & factors affecting it
- Exercise Guidelines at different stages of growth & Development
- Common Postural Deformities - Knock Knee; Flat Foot; Round Shoulders; Lordosis, Kyphosis, Bow Legs and Scolioses and their Corrective Measures
- Sports participation of women in India
- Special consideration (Menarch & Menstrual Disfunction)
- Female Athletes Triad (Oestoporosis, Amenoria, Eating Disorders)

Unit-VI : Test & Measurement in Sports

- Motor Fitness Test—50 m Standing Start, 600 m Run/Walk, Sit and Reach, Partial Curl up, Push ups (Boys), modified Push ups (Girls) Standing Broad jump, Agility—4 × 10 m shuttle run
- General Motor Fitness - Barrow three item general motor ability (Standing Broad Jump, Zig Zag Run, Medicine Ball Put- For Boys : 03 kg & For Girls : 01 kg)
- Measurement of Cardio Vascular Fitness - Harvard Step Test/Rockport Test
- Computation of Fitness Index :

$$\frac{\text{Duration of exercise in second} \times 100}{5.5 \times \text{pulse count of 1 - 1.5 minute after exercise}}$$

- Rikli & Jones - Senior Citizen Fitness Test
 1. Chair Stand Test for lower body strength
 2. Arm Curl Test for upper body strength
 3. Chair Sit & Reach Test for lower body flexibility
 4. Back Scratch Test for upper body flexibility
 5. Eight Foot Up & Go Test for agility
 6. Six Minute Walk Test for Aerobic Endurance

Unit-VII : Physiology & Injuries in Sports

- Physiological factor determining component of Physical Fitness
- Effect of exercise on Cardio-Respiratory System
- Effect of exercise on Muscular System
- Physiological changes due to ageing
- Sports injuries : Classification
- Soft Tissue Injuries :
(Abrasion, Contusion, Laceration, Incision, Sprain & Strain)
- Bone & Joint Injuries :
(Dislocation, Fractures : Stress Fracture, Green Stick, Communated, Transverse Oblique & Impacted)
Causes, Prevention and Treatment
- First-Aid—Aim and Objectives

Unit-VIII : Biomechanics & Sports

- Meaning and importance of Biomechanics in Sports
- Types of movements (Flexion, Extension, Adbuction & Adduction)

- Newton's Law of Motion & its application in sports
- Friction & Sports

Unit-IX : Psychology & Sports

- Personality; its definition & Types Trait & Types (Sheldon & Jung Classification) & Big Five Theory
- Motivation, its type & techniques
- Exercise Adherence; Reasons to exercise, Benefits of exercise
- Strategies for Enhancing Adherence to exercise
- Meaning, Concept & Types of Aggressions in Sports

Unit-X : Training in Sports

- Strength - Definition, types & methods of improving Strength - Isometric, Isotonic & Isokinetic
- Endurance - Definition, types & methods to develop Endurance - Continuous Training, Interval Training & Fartlek Training
- Speed Definition, types & methods to develop Speed - Acceleration Run & Pace Run
- Flexibility - Definition, types & methods to improve flexibility
- Coordinative Abilities - Definition & types
- Circuit Training—Introduction and its importance

Practical

Max. Marks 30

- | | |
|--|----------|
| 01. Physical Fitness | 6 Marks |
| 02. Skills of any one Team Game Proficiency in Games and Sports of choice from the given list* | 7 Marks |
| 03. Yogic Practices | 7 Marks |
| 04. Record File** | 05 Marks |
| 05. Viva | 05 Marks |

* Basketball, Football, Handball, Hockey, Kho Kho, Volleyball & Unified Basketball Bocce (CWIN Children with Special Needs-Divyang)

** Record File shall include :

Practical-1 : Fitness tests administration for all items.

Practical-2 : Procedure for Asanas, Benefits & Contraindication for any two Asanas each lifestyle disease.

Practical-4 : Procedure for administering Senior Citizen Fitness Test for 5 elderly family members.

Practical-5 : Any one game of your choice out of the list above. Labelled diagram of field & equipment Rules, Terminologies & Skills).

UNIT – 1

Planning in Sports

UNIT - 1

Planning in Sports

Key Points :-

- 1.1 Meaning and Objectives of Planning
- 1.2 Various Committees and their Responsibilities
- 1.3 Tournament - Knock-Out, League or Round Robin and Combination.
- 1.4 Procedure to Draw Fixture - Knock-Out (Bye and Seeding) and League (Staircase and Cyclic)
- 1.5 Intramural and Extramural-Meaning, Objectives & its Significance.
- 1.6 Specific Sports Programme (Sports Day, Health Run, Run for Fun, Run for Specific Cause & Run for Unity).

1.1 Meaning of Planning :

“Planning is a way to systematize, direct and organise the events or competitions and extract the advantage and benefit of the available resources.

“Planning is the process of making a sequence of work for a future line of action”.

The success of Physical education programmes depends upon efficient staff, food, direction, proper control, well super vision, good co-ordination and minimize the chances of lapses.

Objective Type/Multiple Choice Questions (1 Marks)

Q.1. Which is not the objective of Planining.

- Ans.** (a) To reduce Pressure
(b) To have good control over activities
(c) To minimise the chances of mistake
(d) To improve the presonal relation among the staff.

Q.2. To avoid the careless mistake under pressure and to achieve the goal, which of them should be more valuable.

Ans. (a) Planning (b) Staffing
(c) Supervision (d) Budgeting

Short Answer Type Question (3 Marks Each)

Q.1 What are the objectives of the planning or explain the objectives of the planning?

Ans. Objectives of planning are as follows:

1. To create good coordination,
2. To keep good control,
3. To reduce unnecessary pressure immediately,
4. To minimize the chances of mistake,
5. To avoid wastage of money, time & resources,
6. To utilize the resources effectively and economically,
7. To improve the effectiveness of the organization.

3 Marks Questions

Q.1 What is planning? Write any four objective of planning

1 + 1/2 × 4 = 3

Q.2 Discuss any three objectives of planning with suitable examples from sports.

1.2. Formation of commattes and their responsibilities
ADMINISTRATIVE DIRECTOR



Excutive Committee

Responsibilities pre	Responsibilities during	Responsibilities post
↓	↓	↓
– Organizing committee	– Publicity committee	– Publicity committee
– Publicity committee	– Organizing committee	– Marking committee
– Marking committee	– Marketing committee	– Fiance committee
– Fiance committee	– Transport committee	
– Transport committee	– Food and accomodation	
– Food and accom-	committee	– Committee for officials and
odation committee	– Grand and equipment	Ground
– Committee for officials	committee	– Equipment committee
– Ground and equipment	– Programme committee	– Programme committee
committee	– First Aid committee	– First Aid committee
– First Aid committee	– Decoration	– Prize distribution
	committee	committee
		– Organizing committee

1.2. Objective Types/ MCQ (1 Marks)

Q.1 Match the following

- Ans.** (a) Technical committee (i) To provide shifting facility
 (b) Finance committee (ii) To resolve dispute
 (c) Transport commitee (iii) To deals with money
 and expenditure
 (d) First aid committe (iv) To provide medical facility.

(A) A-II, B-III, C-I, D-IV

(B) A-III, B-II, C-I, D-IV

(C) A-II, B-III, C-IV, D-I

(D) A-IV, B-III, C-I, D-II

Q.2 Out of them which is not the work of organising committee

Ans. (a) To Draw fixture

(b) To Select referee pannel for match

(c) To conduct the matches

(d) To decorate the tournament venue.

Short Answers Type Question (3 Marks)

Q.1 Write down the role of the various committees post tournament

Ans. The following are the role of the various committees after a tournament.

Publicity Committee: Give reports to media provide information of expenditure to organizing committee. Performance of Players, Records, other important information.

Finance Committee: Mantain a report of the total expenditure and budget for the tournament.

Transport Committee: Provide information regarding the proper use of vehicles after the end of the tournament.

Food and accommodation Committee: Repair work for any damage at accommodation site and providing information of report of players, officals regarding lodging & boarding expenditure to organizing committee.

Committee for officials: Giving payment and thanks letter to all officials.

Ground and Equipment Committee: Repair work for any damage to ground and submitting all equipment to organizing committee.

Programme Committee: Providing information about all participating team to organizing committee and distributing certificates to all participants and officials with thanks.

First Aid Committee: Submitting all first aid equipment and information to organising committee.

Prize Distribution Committee: Co-ordinating with decoration ceremony committee to submit all information and equipment to organizing Committee.

Organizing Committee: Collecting reports from all committees, taking note of all the important information and submitting it to the administrative director.

Long Answer Type Questions (5 Marks Each)

Q.1. Write down the role of the various committees before a tournament.

Ans. The following are the roles of the various committees before a tournament.

Organizing Committee :-

Responsible for organizing and smooth running of the tournament. It instructs other committee one month prior to the tournament and assigns tasks and responsibilities to them.

Publicity Committee :-

Spread information about the players / teams / officials / event prior to the tournament, by T.V., Radio, Newspapers, poster etc.

Marketing Committee :-

Purchasing all equipments and other items required for the tournament and ensuring their quality & quantity.

Finance Committee :-

Prepares budget and estimates possible expenditure during the tournament.

Transport Committee :-

Ensures proper transport facilities for the tournament for all the concerned persons those directly or indirectly participating in the event.

Food and Accommodation Committee:-

Prepares accommodation and food for athletes, VIPs and officials.

Committee for Officials :-

Hires officials required to preside over the matches in the tournament Engage qualified officials for tournament in required nos.

Ground and Equipment Committee:-

Prepares the ground for the tournament few days prior or it. To arrange scientific equipments and well marked grounds (courts, halls, rings etc.) for tournament.

Programme Committee:-

To prepare the whole programme of reception, ceremony, decoration, prize distribution of the tournament. Keeps the records of the participating teams and prepares fixture.

First Aid Committee:-

To arrange qualified doctors, other helpers and maintain proper first aid kits for all possible situations and conditions of the tournament.

Programme Committee:-

Focus on the problems of the participating teams, athletes, official & try to solve it officials or the concern injured persons.

First Aid Committee:-

Treating the injuries sustained by athletes and taking the injured players to hospital if injury is serious.

Q.2 Write down the role of the various committees during a tournament.

Ans. The following is the role of various committees during a tournament.

Organizing Committee :-

Managing all committees and ensuring all committees are doing their work properly.

Marketing Committee :-

Proper provision of all equipments will be required, during the tournament.

Transport Committee :-

Ensuring proper transportation of athletes between accommodation sites, stadium/playing sites, training centres etc.

Food and Accommodation Committee :-

Providing food to all officials and athletes during the tournament as their demand of work and also managing the proper accommodation site.

Committee for officials :-

To satisfy Make proper arrangements of needs to satisfy of the officials during a tournament.

Ground and Equipment Committee :-

Ensuring the proper condition of the grounds and all equipment through out the tournament.

Programme Committee :-

Focus on the problems of the participating teams, athletes, official & try to solve it

First Aid Committee :-

Treating the injuries sustained by athletes and taking the injured players to hospital if injury is serious.

Decoration Ceremony Committee :-

Ensuring the decoration of all the ceremony– opening, closing, prize distribution etc is proper during the tournament.

Announcement Committee :-

Announce important information like the participants of the next match, time, court and date from the stage.

Question 3 Marks

- Q.1 Describe the responsibilities of any three committees before Tournament. $1 \times 3 = 3$**
- Q.2 Describe the responsibilities of organising committee, Publicity committee, grounds & equipment committee during the Tournament. $1 \times 3 = 3$**
- Q.3 Describe the responsibility of any three committees during Tournament. $1 \times 3 = 3$**
- Q.4 Enlist the name of post tournament committees? Describe the responsibilities of any one of committee. $1 \times 3 = 3$**

Long Answers Type Questions

- Q.1 Enlist the name various committees during the Tournament? Explain the Responsibilities of any four committees.**
- 1.3 Tournament :** A series of sports competitions, in which, a team finally wins and rest of the participating teams lose the matches. It depends on various factors i.e. - No. of participating teams, availability of grounds and equipments, No. of days and funds.

Types of Tournament

A. Knock out : In this type of tournament, the team once defeated, gets eliminated from the tournament. Only the winning teams contest in the next rounds. Opportunities are given to the winning players/ teams.

B. League : In single league tournament all participating teams compete, with each other, where-as in double league, each team plays with every other team twice, without any consideration of victory or defeat.

C. Combination Tournament: These are the Tournament is which some rounds are played on the basis of knock out & some are played on the Basis of league examples.

Knock out cum knock out

Knock out cum league

League cum league

League cum knock out

Objective Types/MCQ (1 Marks)

Q.1 The other name of League Tournament is—

- (a) **Round robin Tournament**
- (b) Knock out Tournament
- (c) Combination Tournament
- (d) Challenge Tournament

Q.2 To avoid compete in initial round which of the following is correct.

- (a) Bye
- (b) **Seeding**
- (c) fixture
- (d) Special seeding

Short Answer Type Question (3 marks)

Q.1 What are the advantage & disadvantages of league or round robin tournament.

OR

Write down the merits & demerits of the league tournament.

Ans. Merits

1. Only real player/ team that has best potential will be the winner of the tournament.
2. Charm of the tournament still maintained through out the tournament.
3. Good team/ player will continues through out the tournament so the chance of selection of good players is still alive.

Demerits

1. Funds are required more
2. Time is required more
3. Result comes late
4. Requirement of more no of officials and more no of grounds.
5. Equipments are needed more.

Short Answer Type Question (3 marks)

Q.1 Describe the merits & demerits of knock out Tournaments. $1 \times 3 = 3$

Q.2 Describe the merits & Demerits of league Tournament.

Q.3 Differentiate Between knock out & round robin tournament $1 \times 3 = 3$

Q.4 Define tournament and explain its types?

1.4 Procedure to Draw Fixture for Knockout Tournament

Step 1. Divide the total no teams in to two half if total no teams are more than 16 divided than also in quarter.

Step 2. Check if total no of team are in power of two i.e. (2,4,8,16,32,64.....) or not.

Step 3. If total no of teams are not in power of two then byes will be given.

Step 4. Calculate the byes & place them according to the formula.

Step 5. Arrange the match. It should be remembered that match can be arranged between the teams in the same round.

Step 6. It should be remembered that if the total no teams are more than 16 the byes of upper half will be placed separately my lower half will be separately.

Step 7. In case of seeding or special seeding we calculate the byes of the deducting total no seeding from the total no. of

teams.

Formula No. 1. Total no matches = total no of team–1.

Formula No. 2. To calculate total no of rounds multiply 2 with 2 continuously (2*2*2*....) unit the multiplication value reaches equal to or more than the total no. of teams than calculate the repetition of digit 2 multiplication which will be equal to total no of rounds.

Formula No. 3 total byes = next power of two—total no of teams

Formula No. 4 If total no teams are even. 2,4,6,8 team in upper

$$\text{Teams in upper half} = \frac{\text{Total no teams}}{2}$$

$$\text{Team of lower half} = \frac{\text{Total no team}}{2}$$

Total no teams are odd (1,3,5,7,9....) then

$$\text{Team in upper half} = \frac{\text{Total no teams}+1}{2}$$

$$\text{Teams in Lower half} = \frac{\text{Total no teams}-1}{2}$$

Formula No. 5

If total no of byes are even (2,4,6,8)

$$\text{Then byes in upper half} = \frac{\text{Total no Byes}}{2}$$

$$\text{Bye in lower half} = \frac{\text{Total no Byes}}{2}$$

If total no of bye are odd (1,3,5,7)

Then

$$\text{Bye in upper half} = \frac{\text{Total no Bye}-1}{2}$$

$$\text{Byes in lower half} = \frac{\text{Total No Bye} + 1}{2}$$

Formula no. 6. To divide the total no of teams in quarters then divide the total no. of team by 4 & follow the given table.

$$\frac{4 \left\lfloor \frac{\text{Total no of team}}{4} \right\rfloor}{R}$$

Qsr	Quarter-1	Quarter-2	Quarter-3	Quarter-4
If R=0	Q	Q	Q	Q
If R=1	Q+1	Q	Q	Q
If R=2	Q+1	Q	Q+1	Q
If R=3	Q+1	Q+1	Q+1	Q

Formula no - 7 placement of bye :-

1st bye will be given to last team of lower half

2nd bye will be given no. 1st team of upper half

3rd bye will be given to 1st team of lower half

4th bye will be given to last team of upper half

5th bye comes besides bye no. 1

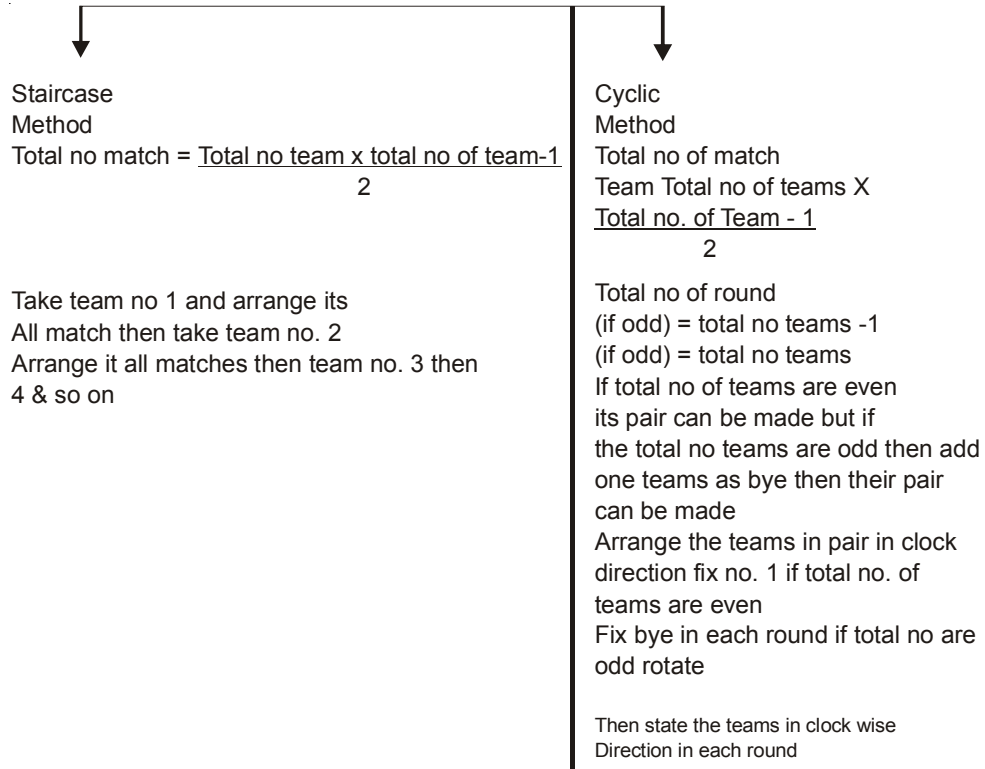
6th bye besides bye no. 2

7th besides bye no. 3

8th bye near to bye no. 4 then 9th bye near bye no. 5 and so on

Seeding placement will follow the same sequence as bye

Procedure to draw the fixture for League Tournament



Objective Types/MCQ (1 Marks)

Q.1 Total no matches for knock out tournament is decided as—

- (a) $(N - 1)$ (b) $(N^2 - 1)$
(c) $(N \times n - 1)$ (d) $\left(\frac{n \times n - 1}{2}\right)$

Q.2 To calculate Total No of matches for league Tounament (single league)

- (a) $\frac{N(N - 1)}{2}$ (b) $\left(\frac{N^2 - 1}{2}\right)$
(c) $(N^2 - 1)$ (d) $(N - 1)^2$

Q.3 How many bye will be given for 21 teams on the knock out basis.

- (a) 15 (b) 16
(c) 14 (d) 17

Q.4 In the placement of Byes, IV Bye is given to whom.

- (a) 1st Team of lower half
(b) 1st team of upper half
(c) Last team of lower half
(d) Last team of upper half

Q.5 To calculate the total no of team teams is upper half for knock out tournament when total no of teams are odd, which formula is used.

- (a) $\frac{N+1}{2}$ (b) $N-1$
(c) $\frac{N^2+1}{2}$ (d) $\frac{(N+1)^2}{2}$

Short Answer Type Question (3 Marks)

Q.1 Explain the staircase method of league tournament and draw the fixture of 12 teams in staircase methods.

Ans. Stair case method :- in stair case method the fixture are made just like a ladder or a stair case in this method no bye is given to any team and there is no problem of even or odd number of teams.

Fixture

1-2												
1-3	2-3											
1-4	2-4	3-4										
1-5	2-5	3-5	4-5									
1-6	2-6	3-6	4-6	5-6								
1-7	2-7	3-7	4-7	5-7	6-7							
1-8	2-8	3-8	4-8	5-8	6-8	7-8						
1-9	2-9	3-9	4-9	5-9	6-9	7-9	8-9					
1-10	2-10	3-10	4-10	5-10	6-10	7-10	8-10	9-10				
1-11	2-11	3-11	4-11	5-11	6-11	7-11	8-11	9-11	10-11			
1-12	2-12	3-12	4-12	5-12	6-12	7-12	8-12	9-12	10-12	11-12		

Q.2. Write specifying calculation prepare cyclic fixture for 9 teams.

Ans. Total Number of team = 9

$$\text{Total Number of Match} = \frac{N(n-1)}{2} = \frac{9(9-1)}{2} = \frac{9 \times 8}{2} = \frac{72}{2} = 36$$

Total number round n = 9 round

Fixture

1 round	II round	III round	IV round	V round	VI round
9 B	8 B	7 B	6 B	5 B	4 B
8 1	7 9	6 8	5 7	4 6	3 5
7 2	6 1	5 9	4 8	3 7	2 6
6 3	5 2	4 1	3 9	2 8	1 7
5 4	4 3	3 2	2 1	1 9	9 8

VII round	VIII round	IX round
3 B	2 B	1 B
2 4	1 3	9 2
1 5	9 4	8 3
9 6	8 5	7 4
8 7	7 6	6 5

Q.3. Explain the procedure (method) to Calculate byes.

Ans. When the total number of the teams in the tournament are not in the power of 2 then bye is given.

The method of bye is

First find the next power of 2 after the number of teams.

Example :- Total team = 11

Next power of 2 = 16

Number of bye = 16-11=05 bye

1. First bye is given to lower half bottom team
2. Second bye is given to top most team of upper half
3. Third bye is given to upper most team of lower half
4. Fourth bye is given to bottom team of upper half
5. Other byes are determined using this order.

Long Answer Type Question (5 Marks)

Q.1 Make the fixture for 13 teams on the basis of knock out.

Ans. Total no. of matches :-

Total no teams -1 13-1=12 matches

Total no of round = 2*2*2*2

Digit 2 repeats four time so no of round = 4 rounds

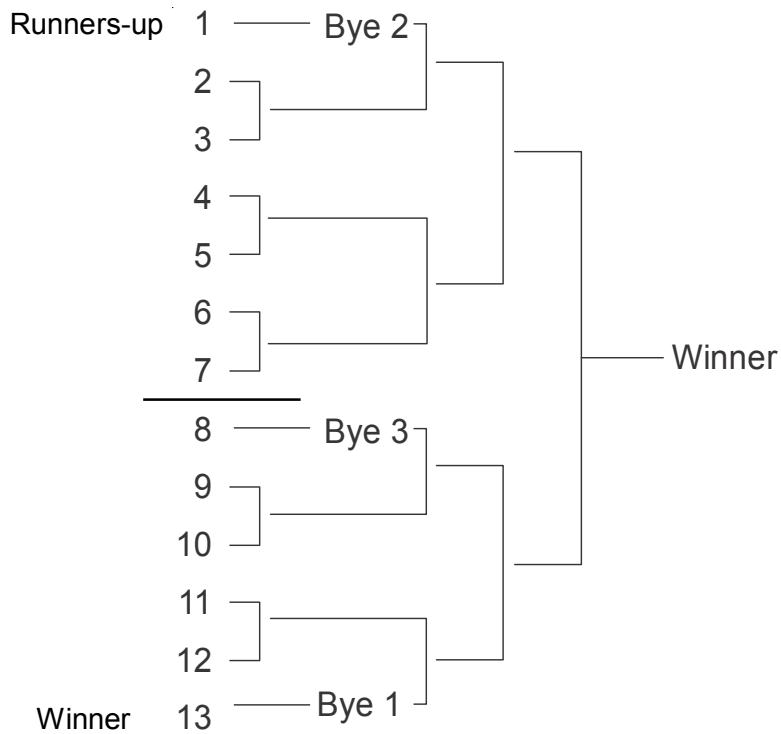
Total no bye :- next power of 2- total no. of team 16-13 =03

$$\text{No of team is upper half} = \frac{\text{Total no of team}+1}{2} = \frac{13+1}{2} = 07 \text{ teams}$$

$$\text{No. of teams in lower half} = \frac{\text{Total no of team}+1}{2} = \frac{13-1}{2} = 06 \text{ teams}$$

$$\text{No. of bye is upper half} = \frac{\text{Total no Bye}-1}{2} = \frac{3-1}{2} = \frac{2}{2} = 1 \text{ teams}$$

$$\text{No. of bye in lower half} = \frac{\text{Total no Bye}+1}{2} = \frac{3+1}{2} = \frac{4}{2} = 2 \text{ teams}$$



Q.2 Draw the fixture for 24 team on the basis knockout tournament

Ans. Total no matches = Total no of team -1 = 24-1 = 23.

Total no. round = $2 \times 2 \times 2 \times 2 \times 2$

i.e. Digit 2 report 5 times

So total no round = 5 round

Total team in upper half = Total no of teams = $\frac{24}{2} = 12$ teams

Total team in lower half = Total no of teams = $\frac{24}{2} = 12$ teams

As the total no of teams are more then 16 so we have to divide teams also in quarter.

Teams in each quarter: $4 \times 24 \div 6$ (Q=6)

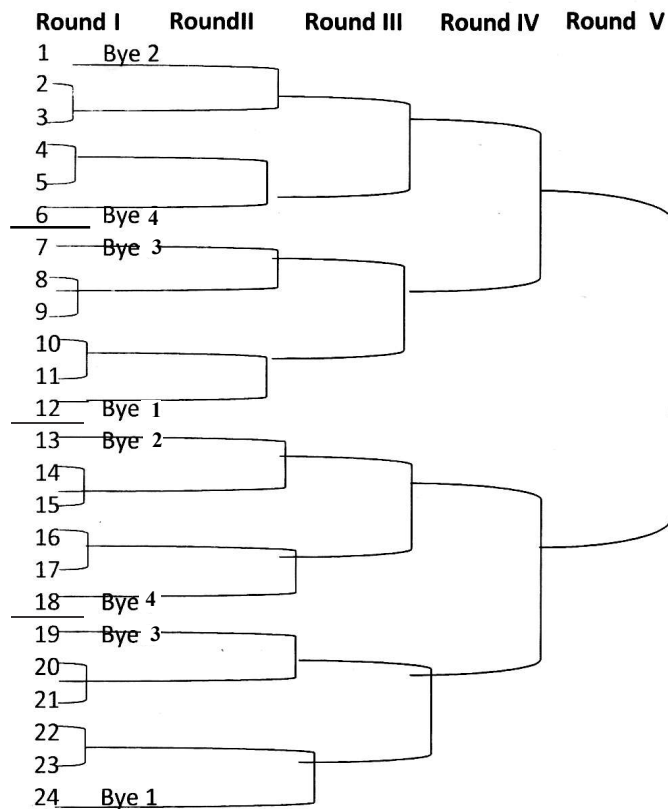
24

R=0

Total No. bye = Next power of two Total no of team
 $= 32 - 24 = 08$ Byes

Bye in Upper half = $\frac{8}{2} = 4$ Byes

Bye in lower half = $\frac{8}{2} = 4$ Byes



Q.3 Draw a fixture of knock out basis for 11 teams by giving seeding to 2 teams.

Ans. Total no matches = Total no of team -1 = 11-1 = 10
 Total no round = $2 \times 2 \times 2 \times 2 = 4$ Rounds

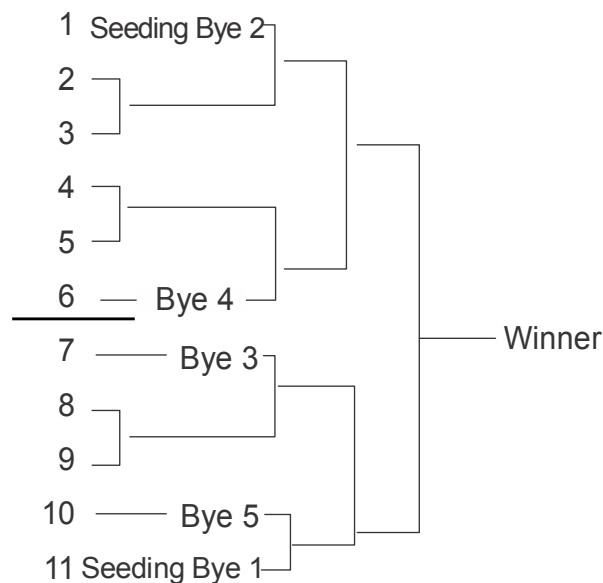
Repetition of digit 2 is 4 time so total no round = 4 rounds

$$\text{Team in upper half} = \frac{\text{Total no of team}+1}{2} = \frac{11+1}{2} = 6 \text{ teams}$$

$$\text{Team in lower half} = \frac{\text{Total no of team}-1}{2} = \frac{11-1}{2} = 5 \text{ teams}$$

$$\text{Total No. of bye in upper half} = \frac{\text{Total no Bye}-1}{2} = \frac{5-1}{2} = \frac{4}{2} = 2 \text{ Byes}$$

$$\text{Total No. of bye in lower half} = \frac{\text{Total no Bye}+1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3 \text{ team}$$



Short Answer Types Question (3 Marks)

Q.1 Draw the fixture for 10 terms on the basis of knock out Tournament.

Q.2 Draw the fixture for 6 teams on the basis of League Tournament (use stair case method)

Long Answer Types Questions (5 Marks)

- Q.1 Draw the fixture on the basis of knock out for 21 team.**
- Q.2 Draw the fixture for 11 team on the basis of League Tournament use Cyclic method.**
- 1.5 Intramurals and Extramurals : Meaning, Objectives and its significance**

Meaning of Intramurals :-

Intramural is derived from the latin word” Intra” means “within” and “murals” means “wall, So we can say that the activities, which are performed within the walls or within the campus of an institution are called ‘Intramurals’

Extramurals :-

Extramural is derived from the latin words “Extra” and “Murals”. Here extra means “outside” and murals means “wall”. So, We can say that the activities which are performed outside the walls of an institution or school, are known as “extramurals”.

Objective Types/ MCQ (1 Marks)

- Q.1 Intramural Tournaments are those Tournaments which are organised.**
- (a) **With in the boundry wall of institute**
 - (b) Out side the boundry wall of institute
 - (c) Interzonal level
 - (d) At national level
- Q.2 Which is not the objectives of Intramural Tournament.**
- (a) To Provide Recreation
 - (b) To help in over all development
 - (c) **To achieve high performance**
 - (d) To provide opportunity to Learn a variety of games & skill.

Long Answer Type Question (5 Marks)

Q.1 Briefly explain the objectives of intramural tournaments.

Ans. Objectives

1. Physical development
2. Mental development
3. Social development
4. To develop good leadership quality
5. To provide recreation to the child
6. To control aggression
7. To provide platform to show himself
8. To increase the sources of competitions
9. To develop the qualities of a good leader
10. To give the knowledge of the rules of various game
11. To find out the talented sport man
12. To develop good personality.

Q.2 Write down the activities for the intramural tournament.

Ans. Major games :- hockey, football, Kho-Kho, Kabaddi etc.

Minor games :- Shuttle run, sag race, triple leg race,
Lemon race etc.

Rhythmic Games :- P.T. Lazium, dumbal, dance etc.

Creative games :- drawing, painting.

Combat games :- Judo, Wrestling, boxing etc.

Q.3 Write down the importance of the extramural tournament.

- Ans.**
1. Help in the physical development.
 2. Help in the mental development.

-
3. Help in the social development.
 4. Help in the personality development.
 5. Reduce the level stress anxiety.
 6. Develop in leadership qualities.
 7. Understand the Rules and Regulations of various games.
 8. Help to control the level of aggression in an individual.
 9. Help for recreation of children.
 10. Help to develop the sense of competitiveness.

Q.4 What do you means by intramurals? Mention the significance of intramurals for school children.

Ans. The word intramural (Intra+murals) within+wall, It means that the activities which are performed within the walls or within the campus of an institution are called intramurals. These activities are organized only for the students of a school or institution. No students of other school can participate in these activities intramural competition is one of the best means to motivate.

All the students of an institution for taking part in the games and sports “A games for each and each for a game “may be considered the motto of intramurals. These activities are the most pleasurable as well as enjoyable for the students they get maximum educational benefits from such competition so a large number of students must be involved in a wide range of intramurals activities.

Significance of Intramural :-

- * Intramurals are very significant for physical mental emotional and social development of students.

-
- * These programmes also lay stress on moral and ethical values of students.
 - * Intramurals are necessary for the development of health of children.
 - * These programmes are also important to calm down the fighting instinct of children.
 - * These programmes refresh the children and make them agile.
 - * Intramurals provide maximum recreation to the students.
 - * Intramurals provide ample opportunities to the students to participate in game and sports.
 - * Intramurals are also essential for development the leadership qualities among the students.

Short Answer Type Question (3 Marks)

- Q.1 Differentiate between Intramural & extramural Tournament.**
- Q.2 What is Intramural Tournament? Describe their need for school children**

Long Answer Type Question (5 Marks)

- Q.1 Discuss the need of Intramural & Extramural Tournament**

$$2 \frac{1}{2} + \frac{1}{2} = 5$$

- Q.2 What is extramural Tournament? Explain these importance be detail.**

$$1 + 4 = 5$$

1.6 Specific Sports Programme

Sports and games programmes are arranged in the world as well as in our country to promote the games and sports for a specific cause. Every country in the world has some or the other cause for promoting specific sports programmes. The programmes motivate and create the feeling to take part in

these sports programmes. People become health-conscious and try to remain fit and stay healthy for as long as possible. These specific sports programmes are usually organized by the federations, state government, NGO etc. to create health consciousness among the people and take part in health related sports programmes.

More and more people of all age groups should take part in such sports programmes. The various important specific programmes are :-

1. Sports Day -
 - A. School - Annual Sports Day
 - B. National Sports Day
2. Health Run
3. Run For Fun
4. Run for Specific Cause
5. Run for Unity.

1.6 Objective Types/MCQ (1 Marks)

Q.1 Match the following

- | | |
|-----------------------------------|---|
| (a) Run for fun | (i) Organised once in year |
| (b) Health Run | (ii) To provide the sense to work jointly |
| (c) Sports Day | (iii) To Promote sense of physical, mental, social & emotional well being |
| (d) Run for unity | (iv) To provide enjoyment |
| (a) A-I, B-II, C-III, D-IV | (b) A-II, B-I, C-IV, D-III |
| (c) A-IV, B-III, C-I, D-II | (d) A-IV, B-III, C-II, D-I |

Long Answer Type Questions (5 Marks)

Q.1 Explain the meaning of specific sport programs? Explain any four. 1 + 4 = 5

Ans. Specific sports programs are those programs of sports which are often not related to the competition these programs are designed with multiple objectives with their focus on the well being of an individual. The aims of programme is to create awareness among the common people regarding unity & integrity prevention & protection against various diseases social +ve & –ve ideas, policies etc.

Specific sports programmes

Sports Day :-

Sports day is organized in the school once in the year so that the all round development of children could be done various physical and recreation activities are conducted on sports day it is organized by almost each and every school on sports day every child gets ample opportunities to take part in activity of there choice. Due to these days most of students get experience as organizer as well as administrator sports day also provide opportunity to select talent for future.

Health Run :-

These programmers are organized by health and sports department to raise the standards of health and to make people aware about good health & to maintain good health. People of any age can take part. There is no competition. These provide significant health benefits. But precautionary measures must be taken before participating i.e. proper sports kit health status of individual.

Run for Fun :-

This is to create awareness among people to keep fit and

healthy. A run for fun is friendly event which is organised for enjoyment & fitness of whole society.

Run for Unity :-

This is to inculcate peace and harmony among the people of different religion of faith. Main purpose of run to develop brotherhood among the different societies group. Winners of run are generally. Awarded by cash trophies certificate etc. Generally runs are organised on 31st october on bith day of Sardar Vallabh bhai patel.

Run for Specific Cause :-

For specific cause run is a run related to good and generous cause. The purpose of this is to earn the funds for a specific cause but the reason should, be good it is after organized by the social organization in order to make the run attractive player, artists and actors are asked to participate in it.

Long Answer Type Question (5 Marks)

Q.1 Describe any five Specific sports programme. $1 \times 5 = 5$

Short Answer Type Question (3 Marks)

Q.1 Write a short note on sports day. $1 \times 3 = 3$

Q.2 Health run are very beneficial for health justify. 3

Q.3 Write very short note on run for fun & run for specific cause $1 \times 3 = 3$

Q.4 What is planning? Explain its two objectives with examples $1 + 2 = 3$

Q.5 What is Tourenament? Explain any four objectivies of interamural Tournament $1 + 2 = 3$

Q.6 Discuss the Importance of extramural Tournament (any six) = 3

Q.7 What is knock out Tournament Write the formula to calculate teams in upper half and placement of byes for knock out Tournament (for 1st four Byes) $1 + 1 + 1 = 3$

Q.8 What do you understand league Tournament? Explain the working of technical committee & organising committee. 1 + 1 + 1 = 3

Miscellaneous Exercise

Objective/MSQ (1 Marks)

Q.1 Match the following

- | | |
|----------------------------|---|
| (a) Intrumurals | (i) After Loosing, get out from Tourenament |
| (b) Knock out | (ii) given when teams are not in power of 2 |
| (c) Bye | (iii) League Tournament |
| (d) Staircouse | (iv) With in the boundry of institute |
| (a) a-IV, b-i, c-II, d-III | (b) a-IV, b-I, c-III, d-II |
| (c) d-IV, b-III, c-II, a-I | (d) b-IV, a-I, c-II, d-III |

Q.2 Match the following

- | | |
|----------------------------|-------------------------------------|
| (a) Cyclic | (i) Resolve Dispute |
| (b) Technical committee | (ii) Out side Institute |
| (c) Extramural | (iii) To avoid to meet in Ist Round |
| (d) Seeding | (iv) Leaguge Tourenanet |
| (1) d-III, c-II, b-I, a-IV | |
| (2) d-II, c-III, b-I, a-IV | |
| (3) d-III, c-II, a-I, b-IV | |
| (4) d-IV, b-III, c-II, a-I | |

Q.8 What is Tournanent? Draw the fixture for 6 teams on the basis of league Tourenanents?

Q.9 Define Planning? Explain the working of any four committes in detail to organise Tourenanent. 1 + 4 = 5

Q.10 What is Bye? Write short notes on sports day and run for specific cause. 1 + 2 + 2 = 5

UNIT - 2

**Sports and
Nutrition**

UNIT - 2

Sports and Nutrition

Key Points :-

- 2.1 Balanced Diet and Nutrition : Macro and Micro Nutrients.
- 2.2 Nutritive and Non-nutritive components of diet.
- 2.3 Eating for weight control - A healthy weight, the Pitfalls of dieting, Food Intolerance and Food myths.

2.1 A. Balanced Diet :- A complete food, a diet contains adequate amounts of all the necessary nutrients required for proper growth & maintenance of body.

OR

Balanced diet is a diet that contains an adequate quantity of the nutrients that we require in a day. balanced diet includes fat, protein, carbohydrates, water, fiber, vitamins and minerals present in the foods that we eat.

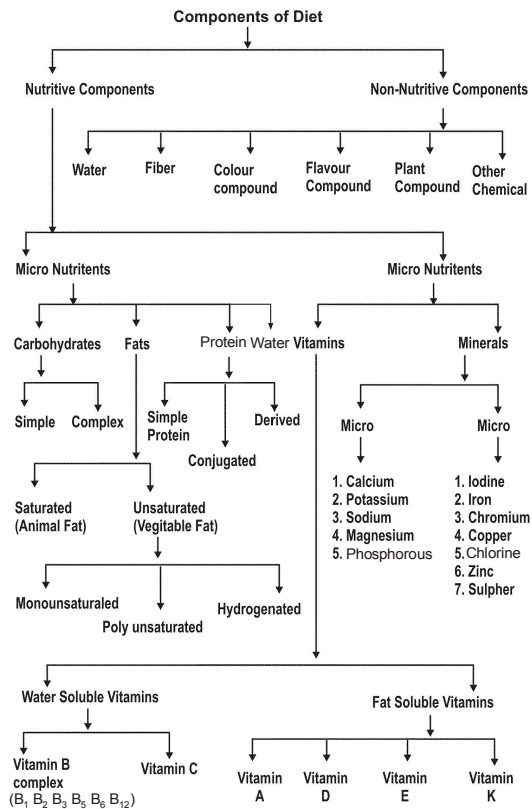
B. Nutrition :- It is the process of obtaining & consuming food or breaking down food & substances taken in by the mouth to use for energy in the body.

C. Nutrients :- The energetic food in our diet consists of various types of essential chemicals for our body termed as nutrients :- e.g. Protein, fat, carbohydrates, vitamins & minerals.

Macro Nutrients :- Macro Nutrient are needed in large quantities they normally include carbohydrates, fat, protein and water.

Micro Nutrients: As vitamins and minerals which are required in small quantities to ensure normal metabolism, growth and physical well-being.

2.1



Multiple Choice Question (1 Marks)

Q.1 Maximum Carbohydrates are obtained from

- (a) Whole grain food (b) Fish
(c) Plant oil (d) Nuts

Q.2 Sources of Proteins includes

- (a) Fish (b) Spinach
(c) Potato (d) Circumber

Q.3 A balanced diet is complete, when it will be–

- (a) Complex Carbohydrates
- (b) **According to the needs of the person**
- (c) Animal fat rich
- (d) 4 to 5 liter water

Q.4 Which food item has carbohydrates and fats

- (a) **Bread and butters**
- (b) Rice and Pules
- (c) Potato and Tomato
- (d) Tomato and Almond

Short Answer Type Questions (80 to 100 words) (3 Marks Each)

Q.1 Explain Balanced diet and its function in our body.

Ans. Balanced diet:- Balanced diet is that which consists of various constituents of food in accurate and appropriate quantity and quality according to the requirement of individual.

Functions of Balanced diet:-

- (i) Sufficient energy is given by balanced diet.
- (ii) It helps individual to grow and develop to optimum level.
- (iii) Proper functioning of organs is done by balanced diet.
- (iv) It helps to repair or replace the worn out tissue.
- (v) Balanced diet improves the defence system of body.
- (vi) It helps to improve the overall health status.
- (vii) Balanced diet improves metabolism.
- (viii) It prevents deficiency diseases and maintain body weight thus overall efficiency of individual improves.

Q.2 Write importance of protein for our body?

Ans. Proteins are basic structure of all living cells. Proteins are main components of muscles, tendons, ligaments, organs, glands, and all living body fluids like enzymes hormones and blood.

Proteins are needed for growth & development of body. It helps to repair or replace the worn out tissues. It does not provide energy in normal routine whereas it acts as energy source only under extreme starvation. Proteins are required for making blood, muscle, Nails, skin, hair and body parts and repair them and important in some situation like early development maturation, Pregnancy etc.

Q.3 Write difference between types of simple carbohydrate and complex carbohydrate.

- Ans.**
- (i) Simple carbohydrate give quick energy on the other hand complex carbohydrates release slow energy.
 - (ii) The types of simple carbohydrates are Glucose, Galactose, Fructose, Maltose, Sucrose, Lactose. Complex are starch, Glycogen, Dextrin and Cellulose.
 - (iii) Simple carbohydrate are more sweeter in taste than complex carbohydrates.
 - (iv) Simple Carbohydrate can be absorbed quickly on other side complex carbohydrates take time.
 - (v) Simple carbohydrates can be dissolved in water but complex carbohydrate are insoluble in water.

Q.4 Is fat useful or not useful for us explain?

- Ans.** (i) Fats are store in body and used as emergency sources of energy.
- (ii) Fats are important sources of energy for long duration activities and important for proper function of glands and other internal organs.
- (iii) It helps in transportation of fat soluble Vitamins A,D.E.K.
- (iv) It help in blood clotting maintenance of skin & hair.
- Our diet should consist of 20%–25% of fat higher in take of fat high risk of obesity and many heart diseases.
- (v) Fats maintain body temperature and protect it from effect of external temperature.
- (vi) Fats make body soft & oily.

Q.5 How water is useful for us? Explain Briefly.

Ans. Water is very useful component of our diet because.

Blood plasma comprises 91% of water, water comprises 75% of muscular weight & 70% of body weight. It is important for secretion of waste produces. It regulate the body temperature. Our body loses approximately 2% of our body weight or water per day. We compensate thus loss of water by drinking water and by in take of food substances. It also functions as a lubricant keeps the skin moist and protect the body from shock. 20% of water in take comes from food and remaining intake come from direct drinking water.

Long Answer Type Question (150 to 200 Words)

(5 Marks Each)

Q.1 What is Balanced Diet? How it is important for individual body?

Ans. Balanced diet is that diet which consists of various constituents of food in accurate and appropriate quantity and quality according to the requirement of an individual and helps in growth and development of our body.

Importance :

- (i) **Energy Resource** :- It gives sufficient energy to body for various activities.
- (ii) **For optimum growth & Development** :- It helps individual to grow and to achieve all round development.
- (iii) **Proper function of Organs** :- By help of balanced diet every organ functions work well and properly.
- (iv) **Faster Recovery** :- It helps to repair and replace the worn out tissues thus faster recovery.
- (v) **Strong immune system** :- It gives better resistance power to body to make good immune system.
- (vi) **Improves fitness level** :- It improves over all health states and resulting in fitness of body by preventing diseases.
- (vii) **Improves Metabolism** :- Quality of metabolizing and thus efficient release of energy.
- (viii) **Prevents Deficiency Diseases** :- It gives all necessary nutrients to body so deficiency diseases cannot take place.
- (ix) **Maintaining body weight** :- It helps individual to maintain proper body weight.

-
- (x) **Overall efficiency improves :-** It improves all physiological systems of body and more of efficiency level of individual. In this way balanced diet is useful for us.

Q.2 What factors should be considered for making balanced diet?

Ans.

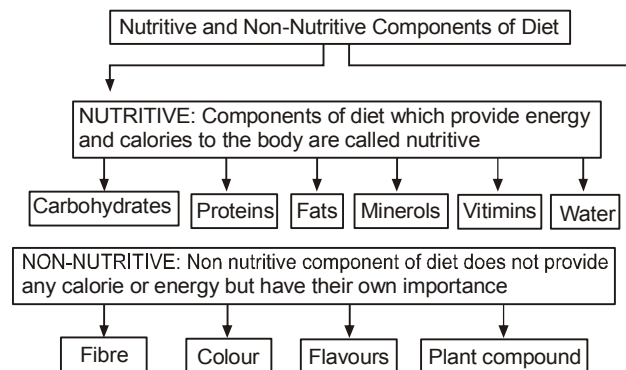
- (i) **Age :-** Age plays great role in making diet for like in growing age a child need more protein but old aged people should avoid more proteins and fats but should take more minerals & vitamins
- (ii) **Gender :-** Sex difference causes variation in diet more caloric requirement to male & less for female.
- (iii) **Profession :-** Heavy physical activities work out needs more calories demand & less physical activities work out less calories demand.
- (iv) **Body weight :-** Obese person need more fibrous food, while slim or lean needs more protein.
- (v) **Specific Sports Diet :-** Various sports need specific diet like long distance runner need more fat and carbohydrates, contact body games player need more protein, exploding strength player needs more carbohydrates.
- (vi) **Pregnancy or feeding mother :-** Pregnant mother needs extra diet - carbohydrates, proteins, fats, vitamins, minerals specially high protein diet is recommended for a pregnant woman.
- (vii) **Diet During Health Problems :-** Injured person should take more protein and minerals. Patients should take diet full of mineral & vitamins.

- (viii) **Climatic Condition** :- The effects the diet like in cold places food should be oily fried, while in coastal region the food should be more liquid.
- (ix) **Doctor's Recommendation** :- Diseased or sick person should take proper diet according to doctor recommendation example patient avoid fried food in jaundice.
- (x) **Eating habits & social Customes** :- They also effect the diet of individual. In some family on the day of festival selected fried food is compulsory for whole family. (any five)

Practice Question 2.1

- Q.1 What are the essential components of balanced diet?**
Explain any two briefly **1 + 2**
- Q.2 What nutritive components are required in lesser Quantify?** **1 × 3 = 3**
- Q.3 Describe the Importance of balanced diet for a person.** **1 × 5**

2.2



Multiple Choice Questions (1 Marks)

Q.1 What is the function of protein as a nutrient.

- (a) Growth of organs and development of new Tissues
- (b) Does not carry oxygen and haemoglobin to all parts of the body
- (c) Required for metabolism
- (d) Prevents skin from being rough

Q.2 Match the following

- | | |
|--|-------------------|
| 1. Creates antibodies | A. Fat |
| 2. Protects internal organs | B. Calcium |
| 3. Essential for bones and teeth | C. Iron |
| 4. Essential for creating haemoglobin | D. protein |

- | | |
|---------------------|---------------------|
| (a) 1D, 2A, 3B, 4C | (b) 1D, 2B, 3A, 4C |
| (c) 1-A, 2C, 3C, 4D | (d) 1-B, 2C, 3D, 4A |

Q.3 Match the following

- | | |
|------------------------|--|
| 1. Carbohydrate | A. Build interal organs |
| 2. Protein | B. Provides energy to the body |
| 3. Fat | C. Make cells soft and flexible |
| 4. Water | D. Protect the soft organs |

- | | |
|------------------------|-----------------------|
| (a) 1-D, 2-A, 3-B, 4-C | (b) 1-B, 2-A, 3-D, 4C |
| (c) 1-B, 2-A, 3-C, 4D | (d) 1-B, 2-C, 3-4, 4A |

Q.4 It is the example of macro Mineral.

- | | |
|----------------|------------|
| (a) Phosphorus | (b) Copper |
| (c) Iodine | (d) Iron |

Q.5 Body needs vitamins and minerals because

- (a) They give the body energy
- (b) **They help carry out metabolic reactions**
- (c) They insulate the body's organs
- (d) They will draw heat from the body

Q.6 Substance needed by the body for growth energy and maintenance is called

- (a) **Nutrient**
- (b) Carbohydrate
- (c) Fat
- (d) Calories

Short Answers Questions (3 Marks)

Q.1. Mention the types and effects of micro nutrients on our body?

Ans. Minerals & Vitamins are the micro nutrients of diet.

Function of Micro nutrients.

- (i) **Calcium** :- It is required for bone and teeth formation, deficiency causes Osteoporosis, Rickets and retarded growth.
- (ii) **Iron** :- It is required for formation of Haemoglobin, deficiency of iron leads to Anemia.
- (iii) **Phosphorus** :- It helps to making strong bones and teeth.
- (iv) **Sodium** :- It helps nervous system for better response, deficiency leads to cramps and tiredness.
- (v) **Iodine** :- It helps in proper growth and development of body, deficiency leads to goitre.
- (vi) **Fluoride** :- It helps to formation of teeth and nails.

(vii) **Chloride** : - It helps body to fight against infection, proper functions of nervous system.

Vitamins :

Vitamin A - Helps in normal growth and development of eyes and skin.

Vitamin D - Important for formation of strong bones & teeth.

Vitamin E - It protects the cell membrane and acts as antioxidant.

Vitamin K - Helps in Blood clotting and heals wounds.

Vitamin B - For growth & development.

Vitamin B₂ - Helps in growth of RBC.

Vitamin B₃ - Play important role in energy transfer, reactions in the metabolism of glucose, fat & alcohol.

Vitamin B₅ - In involved in oxidation of fatty acids & Carbohydrates.

Vitamin B₆ - It helps in metabolism of amino acids.

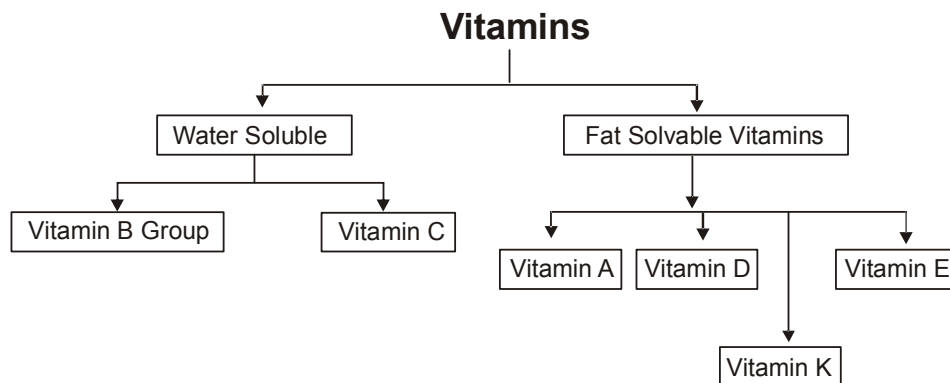
Vitamin B7 - It play key role in metabolism of lipids, proteins and carbohydrates.

Vitamin B9 - Folic Acids Needed for normal cell division especially during pregnancy and infancy.

Vitamin B12 - It involved in cellular metabolism of carbohydrates proteins and lipids and helps in production of RBC in bone marrow.

Q.2 Explain fat soluble vitamins and their sources and water soluble vitamins and their sources.

Ans.



Fat Soluble Vitamin

- Vitamin A** Vitamin A is found in Cord liver Oils/animal Liver, york, Milk, & Milk products, carrot.
- Vitamin D** Vitamin is found in milk, fish, and Liver oils
- Vitamin E** Vitamin E is found in Green leafy Vegetables, Pulses, eggs, cereals.
- Vitamin K** In tomatoes, Potatoes, Spinach, cabbage, soyabean, fish, cauliflower, wheat, eggs, meat.

Water Soluble Vitamins

- Vitamin B** Vitamin B - Sources include peas, perk Liver, Legumes
- B2** -- We can find in eggs, dark green vegetables, legumes, whole and enriched grain produced milk.
- B3** -- Fish, meat, peanuts and whole enriched grain produced milk.
- B5** -- Pork, meats whole grains, cereals legumes, green leafly vegetables.
- B6** -- Cereals, grains, legumas, vegetables, milk, cheese, eggs, fish liver, meat, flour.
- B12** -- Fish, red meat, milk, cheese, eggs.

Vitamin C Citrus fruits like grape, lemon, oranges, and kiwis, other good sources of vitamin C are mango, papaya, pineapple.

Q.3 What do you understand by non nutritive components of diet? Explain the importance of any two such components.

Ans. Non-nutritive component of diet does not provide any calorie or energy but have their own importance.

(1) **Fibre:** It is undigested part of food. It cannot be digested by human intestinal part. It increases appetite and smoothers function of intestines. It removes constipation.

(2) **Flavour Compounds:** It addresses the tastes of food. But does not contribute any nutritive value. Like tea in milk or coffee powder in milk gives it colour and taste.

(3) **Colour Compound:** It makes attractive to see by the wide reflection of colours made possible through pigments. Natural Pigment are found in fruits and vegetables like red, orange, yellow, green etc.

(4) **Plant Compounds:** There are some plants which contain non nutritive element. Ingestion can be beneficial or harmful. There are many compounds that inhibit cancer. (Explanation any two)

Long Answers Questions (5 Marks)

Q.1 What is balanced diet? Write its components in detail.

Ans. Balanced diet is a diet that contains an adequate quantity of the nutrients that we require in a day. A balanced diet includes fats, protein, carbohydrates, water, fiber, vitamins and minerals present in the foods that we eat.

Macro Nutrients:-

1. **Carbohydrates:** They are main source of energy for all activities. They give quick energy and less amount of carbohydrate in diet causes under nutrition and weight loss. Excess amount has been stored in livers and tissues from there they release the energy when in need.
2. **Proteins:** Proteins are needed for growth and development of body. It helps and replace the worn out tissues. It does not provide energy under normal routine but give energy under extreme starvation, High intake of proteins creates overload over kidney and livers. Deficiency diseases are kwashiorkor or marasmus.
3. **Fats:** Fats are emergency sources of energy and stored in body. Fats carry Vitamine, A,D,E,K. They are sources of energy for large activities. In proper functionary of glands and internal organs against the blood clotting, maintains the skin and important functions of glands. Internal organs helps on blood clotting. Our diet should consist of 20%-25% of fat more intake more risk of obesity and many heart diseases. So that nutrients and highly proportion of diet should be taken in proper amount according to need.
4. **Water:** It is essential nutrient our body consists of 70% of water. Water consist 90% of blood. Each person shall drink 8-10 glass of water daily. The essential are sent through water to all cell of body. It is significant in excretion of wast products. It help in digestion. it also regulates the body temperature.

Practice Question 2.2

Q.1 Explain nutritive and non-nutritive components of diet?

$$1 \frac{1}{2} + 1 \frac{1}{2}$$

Q.2 What do you understand by diet? Explain any four components of dit. 1 + 4

Q.3 Explain any three non-nutritive components of diet. 1 × 3 = 3

Q.4 Describe any five nutritive components of dit. 1 × 5 = 5

2.3 Eating for weight control-A healthy weight. The pitfalls of dieting, food intolerance and food myths.

(A) Eating for weight Control

A healthy weight is a weight that lowers your risk for health problems, generally body mass index (BMI) and waist size are good ways to achieve healthy weight. Methods to calculate BMI = Weight in Kg/ (Height in m)².

Eating for weight control :- Factors to control body weight

- * Balanced diet
- * Drink lots of water
- * Eating lot of fibrous food
- * Regular Medical Checkup
- * Avoid Fats
- * Medicine only by doctors advice
- * Physical Activity
- * Avoid Drinking
- * Avoid Junk food
- * Meals in small intervals

-
- * Follow Hygienic Habits
 - * Do not do Dieting
 - * Never Try slimming pills
 - * Avoid over does of carbohydrate.
 - * Balancing the intakes of calories and expenditure of calories.

B. Pitfalls of Dieting

- * Disturbed digestive system
- * Acidity problem
- * Gastric problem
- * Muscular weakens
- * Quick Tiredness
- * Loose the shining of face
- * Disturbed the metabolic rate
- * Muscles cramp
- * Chances of heart problems
- * Pain in stomach
- * Palpitation
- * Burning sensation in urine
- * After dieting, when A person comes on his normal diet. Body weight overshoots the initial body weight from where he started the dieting.

C. Food Intolerance

Food intolerance is that when a person has difficulty in digesting a particular food.

Symptoms : Nausea, Vomiting, Pain in joints, headache and rashes on skin, Diarrhoea, sweating, palpitations,

To reduce body weight when a person skip diet and calories food. It is called dieting.

Food myths: Some various myths regarding food.

1. Don't take heavy Breakfast
2. Potato Increase obesity
3. Does eating sweets cause diabetes
4. Do not drink water during meals
5. Sweets are not good for health
6. Don't take milk just after eating fish
7. Do not take greasy meals
8. Dieting reduce weight
9. Non-Veg. food is compulsory for protein

Multiple Choice Question (1 Marks)

Q.1 In which category BMI comes in 30 BMI

- | | |
|----------------------|-------------------|
| (a) Obesity I | (b) Over lead |
| (c) Obesity II | (d) Neathy weight |

Q.2 Methods to control healthy body weight

- (a) Not taking balanced diet
- (b) **Regular physical activity**
- (c) Excessive water consumption
- (d) Frequent eating

Q.3 Disadvantages of Dieting

- (a) No change in body weight
- (b) Over body weight
- (c) **Loss in body weight**
- (d) Not achieving the required goal

Q.4 Symptoms of headaches, vomiting, stomach pain. loose motion.

- (a) Dieting
- (b) Food intolerance
- (c) Food myths
- (d) Lack of vitamins

Q.5 Match the following

- | | |
|---------------------|-------------------------------------|
| 1. Food Intolerance | (A) Loss in body weight |
| 2. Food myths | (B) Vomiting |
| 3. Dieting | (C) Healthy weight |
| 4. B.M.I 24 | (D) Do not drink water during meals |
| (a) ID, 2A, 3B, 4C | (b) IB, 2D, 3A, 4C |
| (c) IB, 2A, 3D, 4C | (d) ID, 2A, 3C, 4B |

Short Answer Question (3 Marks)**Q.1. Mention five pitfalls of dieting**

Ans. Pitfalls of dieting are following -

- (a) Disturbed Digestive System
- (b) Acidity Problems
- (c) Gastric Problems
- (d) Muscular Weakness
- (e) Quick Tiredness
- (f) Loose the Straining of Face
- (g) Disturbed Metabolic Rate
- (h) Peptic ulcer
- (i) Chance of heart problem
- (j) Pain in Stomach
- (k) Palpitations
- (l) After dieting when person comes, normal diet his body weight overshoot to his initial body weight from where he started the dieting. (any three)

Q.2 How food intolerance is treated? What are Symptoms Explain in brief?

Ans. Food intolerance is treated by medical help where we know the food which causes problem. Food intolerance is more common than food allergy. Food intolerance is a term used widely for varied physiological response associated with a particular food. The individual elements of certain foods that cannot be properly purposed and absorbed by our digestive system.

Symptoms of Food Intolerance :

Food intolerance can cause nausea, stomach pain, Diarrhoea, Vomiting, Flatulence Gas, Cramps, heart burn, headache, irritability, nervousness etc.

Long Answer Question (5 Marks)

Q.1. Describe the myths of dieting. (1 × 5 = 5)

Ans. Food Myth/ Dieting Myths.

(i) Myth :- Low fat or no fat diet are good.

Fact :- Body needs fats for energy, tissue repair and to transport vitamin A,D, E,K. Just cut down on saturated fat eating unsaturated fats.

(ii) Myth Crash :- Dieting or Fasting may loose weight.

Fact :- It may be true in short term but ultimately it hinder weight loss. Loosing over the long term burns off fat whereas crash dieting or fasting not only removes fat but who leans muscles.

(iii) Myth :- Food eaten by late night is more fattening.

Fact :- it doesn't make much change.

(iv) Myth :- Low fat milk has less calcium that full fat milk.

Fact :- Skimmed and semi skimmed actually have more calcium because it is in watery part and not in creamy part of milk.

(v) Myth :- Vegetarian cannot build muscles.

Fact :- Vegetarian can built muscles as meat eaters by getting their proteins from vegetables such as cheese nuts pulses etc.

(vi) Myth :- Healthy food is expensive.

Fact :- Tinned, stored, packed food is expensive, whereas local & seasonal food is inexpensive.

(vii) Myth:- Milk should not be taken immediately after fish.

Fact: It is not true, it will not give any allergy or irritation scientist don't think so.

(viii) Myth:- Eat less nuts they are too fattening

Fact: It is true that nuts contain a lot of fat but it is mostly the food kind. Recent research suggested that eating nuts as part of a healthy diet may even help you loose weight (Explain any five)

Practice Question 2-3

Q.1 Briefly explain any three causes of food intolerance.

(1× 3)

Q.2 What is the difference between food intolerance and food myths?

Q.3 Explain healthy weight and discuss disadvantages of dieting:

(2 + 3)

Practice Question Chapter-2

Q.1 Differentiate between macro and micro nutrient.

(1½ + ½)

Q.2 State the components of balanced diet and their daily requirements.

(1 + 2)

Q.3 Differentiate between food intolerance and food myths?

(1 + ½ + ½)

**Q.4 What kind of diet helps to maintain healthy weight?
Explain briefly and also explain negative effects of dieting.**

(3 + 2)

Q.5 Explain nutritive and non-nutritive components of diet in detail.

(2½ + 2½)

Q.6 Briefly describe importance of consumption of water and state water soluble vitamins?

(2 + 3)

Q.7 Match the following

1. Protein (A) Teeth and blood related discuse

2. Water (B) Growth of skin, nails, hair, internal organs.

3. Colour compound (C) 60-70% Precent of human body

4. Dieting (D) Make food appealing

(a) IB, 2C, 3D, 4A (b) IC, 2D, 3A, 4B

(c) ID, 2A, 3C, 4B (d) IA, 2C, 3B, 4D

(B) 1. Dryness (A) Deficiency of calcium

2. Anaemia (B) Deficiency vitamin A

3. Decreased bone density (C) Lack of water during dieting

4. Night Blindness (D) Dificiency iron

(a) ID, 2C, 3A, 4B (b) IC, 2D, 3A, 4B

(c) IA, 2B, 3C, 4D (d) ID, 2C, 3B, 4B

UNIT - 3

Yog & Life Style

UNIT - 3

Yog & Life Style

Key Points :-

- 3.1 Asanaas preventive measures.
- 3.2 **Obesity:** Procedure, Benefits & Contraindications for Vajrasana, Hastasana, Trikonasana, Ardh matsyendrasana.
- 3.3 **Diabets:** Procedure, Benefits & contraindications for bhujangasan, paschimottasan, Pavanmuktasana, Ardhmatsyendrasana.
- 3.4 **Asthma:** Procedure, Benefits & contraindications for sukhasana, chakrasana, gomukhasana, parvatasana Bhujangasana, paschimottasana, matsyasana.
- 3.5 **Hypertension:** Tadasana, vajrasana, pavan muktasana, Ardchakrasana, Bhujangasana, shavasana.
- 3.6 **Back pain:** Tadasana, Ardh matsyendrasana, vakrasana, shalabhasana, Bhujangasana.

Asana as preventive Measures :

Asana in a body posture, originally a sitting pose for meditation, and later in Hatha yoga and modern yoga adding standing (Tkionsana), sitting (Padmasana), Reclining (Shavasana), invented (Shirasasana) Balanacing (KUkut forward bend) (Paschimotasana) and Backward (Dhanurasana), The Yog sutras of Patanjali define Asana as a position that in steady and comfortable.

As a preventive measure, more recently, studies have provided evidence that asana improve flexibility, strength and balance, to reduce stress and conditions related to it, and specifically to alleviate some diseases such as asthma, and diabetes,. One remarkable aspect of asana is anyone can practice in it. One can adjust the level, the intensity depending on age and capacity.

Regular Asana practice create mental clarity and calmness increase body awareness relieves chronic stress pattern, relaxes the mind, centers attention, and sharpens concentration and self awareness, Whenever Individual roll out their yoga mat and twist their bodies in different poses they are also reaping countless health benefits as :

Benefits of Asana for prevention of disease

Benefit

Physiological	Psychological	Bio-chemical
<ul style="list-style-type: none"> • Blood pressure decrease. 	<ul style="list-style-type: none"> • Mood improves and subjective well being increases 	<ul style="list-style-type: none"> • Total white blood cell count decrease.
<ul style="list-style-type: none"> • Musculo-skeletal flexibility and joint rate of motion increases. 	<ul style="list-style-type: none"> • Self-acceptance and self-actualisation increases. 	<ul style="list-style-type: none"> • Sodium decreases. • Glucose decreases. • Triglycerides decreases.
<ul style="list-style-type: none"> • Stable autonomic nervous system equilibrium. 	<ul style="list-style-type: none"> • Self-acceptance and self-actualisation increases. 	<ul style="list-style-type: none"> • Total cholesterol • HDL/good Cholesterol increases.
<ul style="list-style-type: none"> • Pulse rate decreases. 	<ul style="list-style-type: none"> • Social adjustment increases. 	<ul style="list-style-type: none"> • Total cholesterol decreases.
<ul style="list-style-type: none"> • Cardiovascular efficiency increases. 	<ul style="list-style-type: none"> • Anxiety and depression decreases. 	<ul style="list-style-type: none"> • LDL/bad cholesterol decreases.

-
- Gastrointestinal function normalizes
 - Endocrine function improve.
 - Dexterity skills improve.
 - Eye-hand co-ordination improves.
 - Dexterity skills improve
 - Reaction time improves.
Energy level increases.
 - Weight normalises.
 - Sleep improves.
 - Immunity increases.
 - Pain decreases.
 - Depth perception improves.
 - Integrated functioning of body parts improves.
 - Concentration improves.
 - Memory improves.
 - Attention improves.
 - Learning efficiency improves.
 - VLDL cholesterol decreases.
 - Haemoglobin decreases.
 - Thyroxin increases.
 - Vitamin C increases.
 - Total serum protein increases.

Multiple Choice Questions (1 Marks)

Q.1. Choose the odd one. Asana helps to improve :

- (a) Blood circulation
- (b) Depth of respiration
- (c) **Speed**
- (d) Digestive system

Q.2. According to Yog sutra, Asana means—

- (a) **Sthira Sukham Asanam** (b) Asanan sukh Shira
(c) Sukhan asanam sthira (d) Sitting pose

Q.3. The word 'YOG' is derived from sanskrit word

- (a) **Yug** (b) Yud
(c) Yuj (d) Yum

Q.4. According to Asthanagyog" Asana lies in what place—

- (a) Second (b) **Third**
(c) First (d) Fifth

Short Answer type Questions (3 Mark each)

Q.1. Elaborate the role of Yoga in preventing life style disease?

Ans. The basic Yogic principles useful in the management of lifestyle disorders are discussed including psychological reconditioning and development of appropriate attitudes, stress management normalization of metabolism, and relaxation, visualization and contemplative practices. The holistic art and science of Yoga in best life style even designed and is effective in managing prevalent lifestyle disorders such as diabetes and hypertension.

Long Answer type Questions (5 Mark each)

Q.1. Enlist the lifestyle related diseases. How can they be prevented with the help of asana /Yoga?

Ans. Lifestyle related diseases are :

- (i) Obesity (ii) Diabetes (iii) Asthma (iv) Hypertension (v) Backpain.

Asana plays an important role to prevent the lifestyle related diseases. They are as follows : :

- 1. Maintain Weight :** Nowadays, obesity has become a challenging problem for the society. By doing asanas daily, we exercise entire organs of our body. By practising asanas regularly, it burns the excess fat of the body, and hence maintains healthy weight.
- 2. Endocrine function normalize :** Diabetes is one of the most common lifestyle related disease. Diabetes occurs due to either the pancreas not producing enough insulin or the cells of the body not responding properly to the insulin produced. The asana like bhujangasana, paschimotan asana, pawanmuktasana, ardh-matsyendrasana etc, help to stimulate and regulate pancreas to produce insulin which helps to maintain glucose level in the body.
- 3. Respiratory efficiency increases :** Asthma is a common lifestyle related disease. It occurs due to narrowing of trachea, due to which oxygen supply to lungs and body is compromised. Asana help in maintaining the trachea wide open, increase the lungs capacity and blood flow to lungs. Thus oxygen supply is maintained and asthmatic episodes are reduced and respiratory efficiency is increased.
- 4. Regulates Blood Flow :** Yoga/Asanas regulate blood flow in the body and help maintain a constant blood pressure. They help the body to relax and thus reduce the

high blood pressure. Yoga calm down the body and the mind and thus blood pressure is normalised.

- 5. Proper Alignment of Spine :** Asana, such as Tadasana, Ardhamatsyndrasana, Vakrasana, etc. correct the alignment of spine and thus improve posture and help in reducing backpain. More often backpain occurs due to incorrect posture, in which muscles get the strain and start aching. Correct posture relives the backpain as spine straightens up.

3.2 Obesity

Now A days obesity has become a problem for the whole world obesity is a condition in which the amount of fat in the body increase to a very large extent. If a person is having $BMI \geq 30$ he/she would be considered as obese. In other words, we can say obesity is when a person's weight is 20% or more than the ideal weight. There are two main reasons for obesity the bad habits of eating and deterioration of the digestive system. In such a persons life, there is no physical activity at all.

Due to many health risks of obesity it has been given the status of a disease. Due to obesity, diseases like diabetes, high blood pressure, cancer, arthritis etc. are caused. There are many causes of obesity such as overeating, Lack of physical exercise, thyroid. Geneties, diet high in carbohydrate frequency of eating, medications, psychological factors, social issues. hormones changes (pregnency, Menopaus)

To remove obesity, these postures should be done.



Hastasana



Trikonasana



Ardhmatsyendrasana



Vajrasana

Multiple Choice Questions (1 Marks)

Q.1. BMI of a obese person in : _____

- (a) 19 to 25 (b) Less than 28
(c) **Greater than 30** (d) Less than 30

Q.2. Obesity means : _____

- (a) Less insuline production (b) **Accumulation of fat**
(c) Burning of fat (d) Enlargyment of heart

Q.3. What is the excess percentage of the normal weight is called obese : _____

- (a) 15% (b) **20%**
(c) 25% (d) 30%

Q.4. Which of the following Asana (posture) is not used for obesity.

- (a) Ardhamatssyendrasaana (b) Vajrasana
(c) **Parvatasana** (d) Trikonasana

Q.5. Choose the Asana which is used for obesity :

- (a) Sukhasana (b) Savasana
(c) **Vajrasana** (d) Shalabhasana

Multiple Choice Questions (1 Marks)

Q.1. Define obesity. Explain the procedure and Benefits/ contraindications of any two asana which helps to reduce obesity.

Ans. Now a days obesity has become a problem for the whole world. Obesity is a condition in which the amount of fat in the body increases to a very large extent. In other words, we can say obesity is when a person's weight is 20% or more than the ideal weight. There are two main reasons for obesity the bad habits of eating and deterioration of the digestive system. In such a person's life, there is no physical activity at all.

Due to many health risks of obesity it has been given the status of disease. Due to obesity, diseases like diabetes, high blood pressure, cancer, arthritis, etc. are caused. There are many causes of obesity such as excessive food, hard work, thyroid, hereditary.

To remove obesity, these postures should be practice.

Vajarasana : (Thunderbolt Pose)

1. Procedure : Sit and keep both leg straight.

Fold right leg and place it under right butt.

Fold left leg and place it under left butt.

Keep your spine, neck and head straight, interlock your toes, open your ankle and sit on it.

Knees should be touching the ground with each other.

Keep both hands on your knees and look straight.

Benefits :

This asana is for meditation.

- Strengthens pelvic muscels.
- It can be practiced after having food. It enhance digestion process.
- Stablizes mind and body.
- Helps in sciatica
- It cures indigestion and improves metabolism.
- Improves flexibility in ankles.
- It gives strength to the tight muscles.
- Improve blood circulation.

Contraindications :

1. Vajrasana should not be practiced by the people who have severe arthritis of the kness.
2. Runners should avoid this if they have injury in their hamstrings or the calves.

-
3. This pose may bring unwanted pressure to the intestine so those suffering from Hernia or ulcers should avoid it.
 4. This pose should not be practiced if one is suffering from injured ligament at the ankles or knee.

2. **Hastottanasana : (Urdhva Hastasana)**

Procedure : Standing erect and keep the legs together.

Locks the fingers together, keeping the palms facing up.

Raise the arms straight up, keep them close to ears.

While releasing the breath bend the waist to the right, exhale and come to the central position.

Repeat it to left side also. Be in bended position for 5 to 10 seconds.

Benefits : Gives rest to whole body.

- In children, helps in increasing the height.
- Increase flexibility in waist.
- Reduce belly fat.
- Also helps in reducing constipation.
- Improve pulmonary functions
- Stimulates nervous system.

Contraindications :

1. One should avoid this pose if having neck pain.
2. One should avoid this pose if having shoulder pain.
3. One should avoid this pose if having spinal injury or pain.

3. **Trikonasan (Triangle pose)**

- While inhaling stretch your right hand towards sky, arm should touch the ear.
- Bend left side slowly while exhaling, till it comes horizontal to the earth.
- Left hand should touch the ground or touch the left leg, knee should be straight.
- Inhale, come back to starting position.
- Change hand position and repeat it from another side.

Benefits.

1. Trikonasana helps in digestions.
2. Therapeutics for stress, anxiety, infertility, neck pain, sciatica.
3. Heals Backache (in initial stage)
4. Help women during their menstrual cycle.
5. Improve flexibility of chest and spine.

Contraindication :

1. Avoid if having low or high blood pressure.
2. Avoid this pose if having any kind of neck injury.
3. Avoid if having back injury.
4. Avoid if an athlete having hamstring injury.

4. **Ardhmatsyendrasana : (Half Lord of the fishes pose)**

Procedure : Sit and keep both legs straight.

Bending the knee of right feet and put right heel below the left hip. Bend left leg and placed the left foot to the right side of the right knee.

Kee Left knee closed to the chest.

Exhale from the right nostril and turns towards the left, and touches the toe of left leg from the right hand.

Body and head moves towards the left.

Repeat while changing the position of legs.

Benefits : Helps nervous system and strengthen the back bone, stretching improves flexibility and tones of muscles.

- Controls menstrual cycle in women and brings shine on face.
- Also controls secretion from pancrease gland.
- Reduces fat and helps in controlling obesity.
- This pose flexes the lower part of the body making the hip stronger and toned.
- Releases excess heat toxins from organs and tissues.

Contraindications :

1. Avoid while suffering from severe back or neck pain.
2. Avoid this pose completely, if having slip disc problem.
3. Those with internal organ issues may find this pose difficult and painful.
4. It should be avoided while pregnancy. (Exaplination of any two asan)

Practice Questions :

- Q.1 Write any two asana for obesity and briefly explain the procedure and benefits of any one of them. $1 + 2 = 3$
- Q.2 Define obesity. Explain the procedure of any two asana which helps ot reduce obesity. $1 + 2 = 3$

Q.3 “Ardhmatsyendrasana and Vajrasana helps to reduce obesity”

Discuss in details.

$2\frac{1}{2} + 2\frac{1}{2} = 5$

Diabetes

Diabetes is commonly known as metabolic disorder characterized by high blood sugar level over a prolonged period. Diabetes is due to either the pancreas not producing enough insulin or the cell of the body not responding properly to the insulin produced,. Due to diabetes the individual has fatigue, frequent urination, increased thirst and increased Hunger. It may cause blurred vision. Kidney failure, cardio vascular disease, loss of weight etc.

The main reason for diabetes is sedentary lifestyle. By doing bhujangasana, paschimottanasana, pavanmuktasana and ardh matsyandrasana, one can get rid of this disease.

Symptoms of Diabetes

- Fatigue
- Increased Thirst
- Increased Hungers
- Blurred Vision
- Kidney Failure
- Cardio vascular Disease
- Loss of Weight
- Frequent Urination

Causes of Diabetes

- Sedentary life style
- Disease

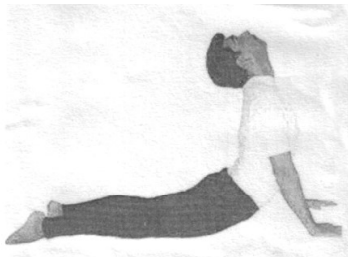
-
- Over weight
 - Obesity
 - Stress & Tension

Diabetes is a metabolic disorder in which the level of sugar in the blood rises from its normal reference value.

Types of Diabetes :

(a) **Type I Diabetes :** In that type of diabetes blood sugar level rises very high due to non secretion of insulin hormone by pancreas. In that of diabetes effected person has to take artificial insulin through injection.

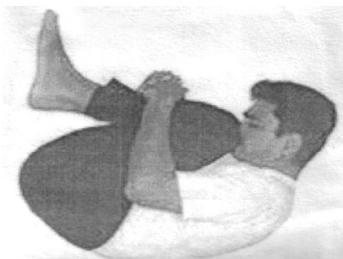
(b) **Type II Diabetes :** In that type of diabetes blood sugar level rises but not as such as high in type I diabetes. In that type of diabetes our pancreas secreting the insulin hormone but it may be insufficient to control the blood sugar level normal or body cell are not able to respond insulin properly.



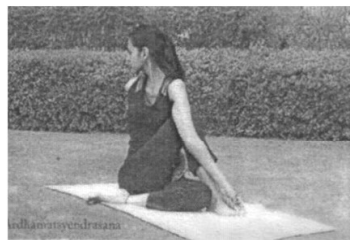
Bhujangasana



Paschimottasana



Pawanmuktasana



Ardhamatsyendrasana

Objectives/Multiple Choice Questions (1 Marks)

Q.1. Choose the asana for diabetes :

- (a) Trikonasana (b) Vajrasana
(c) **Ardhmatsyendrasana** (d) Shalabhasana

Q.2. If pancrease not producing enough insuline. It may lead to : _____

- (a) Migrane (b) Obesity
(c) **Diabetes** (d) Hypertension

Long Answer Type Questions (5 Marks)

Q.1. Define diabetes. Breifly explain any two asana which helps to control diabetes. (5)

Ans. Diabetes : Diabetes is commonly known as metabolic disorder characterized by high blood sugar level over a prolonged period. Diabetes is due to either the pancreas not producing enough insulin or the cell of the body not responding properly to the insulin procuded.

Following are the asanas to control diabetes :

1. Ardhyanatsyendra Procedure : Sit and keep both legs straight

- Bending the knee of the right feet and put right heel below the left hip. Bend left leg and placed the left foot to the right side of the right knee.
- Keep left knee closed to the chest.
- Exhale from the right nostril and turns towards left and touch the toe of the left leg from the right hand.
- Body and head moves towards the left.
- Repeat while changing the position of legs.

Benefits :

- Help nervous system and strengthen the back bone, stretching improves flexibility and tones the muscles.
- Controls Menstrual cycle in women and brings shine on face.
- Also controls secretion from pancreas gland.
- Reduces fat and helps in controlling obesity.
- This pose flexes the lower part of the body making the hip stronger and toned.

2. Paschimottanasana :

Procedure : Sit down with your legs stretching straight in front of you.

Keep your head, neck and spine erect and stretch hands upwards with a deep breath. Now, exhale and bend your head and trunk slowly forward to catch the toes with the thumb. Try to touch head, chest and stomach to the legs and elbows to the floor.

Benefits :

- It Improves digestive system and much blocked gas get released.
- Improves the respiratory system.
- Improve the alignment of the vertebral column.
- Helps as a therapy for diabetic patient, with weak liver and kidney.
- Benefits women during menstrual disorder.

Contraindications :

- Avoid of having slip disc problem.
- Someone who is suffering from hernia should avoid this pose.
- Pregnant women should avoid this pose.
- Person having spondylitis, should avoid this pose.

3. Pavanmuktasana :

Pre Stage : Lie flat on your back and keep the legs straight.

Method : Inhale slowly and lift the legs and bend the knees.

Bring knee upwards to the chest till your thigh touches the stomach. Hug your knees and lock your fingers, touch your chin to the knee while exhaling. Repeat it with another leg.

Benefits :

- Strengthen the back and abdominal muscle, leg and hip.
- Intestine get massaged, also bring fresh blood to lower abdomen.
- Helps in spondylitis.
- Remove excess fat around the lower abdomen..
- Release excess heat, toxins from organs and tissues.

Contraindications:

1. Avoid while suffering from severe back or neck pain.

-
2. Avoid this pose completely, if having slip disc problem.
 3. Those with internal organs issues may find this pose difficult and painful.
 4. It should be avoided while pregnancy.

4. Bhujangasana : (Cobra position)

Procedure : Lie down on your stomach.

Joint the legs and stretch as much as possible.

Place the palm near the chest facing the ground.

Take a deep Breath and lift your upper body upwards. Elbow should be slightly, touch the ground, weight should be on pelvicregion

Move your head and neck backwards as much as possible. Exhale and slightly bring the body in starting position.

Benefits :

1. By doing this, digestion improve.
2. A sluggish liver is also taken care of
3. Thyroid gland improves.
4. Kidney function improves.
5. Tones the ovaries which help to remove any disorder in connection with uterus.
6. Therapeutic benefits : Relieves back ache, neck pain, stress, purifies blood, relieves constipations and addresses gynecological disorder.

Contraindications :

1. Avoid if spinal problem
2. Avoid if neck problem
3. Do not do if having ulcer
4. Pregnant women should avoid.
5. Avoid if having asthma
6. Activate pancreas to produce insulin.
7. Cure acidity, digestive problem, diabetes, blood pressure, hypertension, cervical spondylosis.

Contraindications :

- Anyone with severe migraine should not try this.
- Avoid if having low or high blood pressure.
- Avoid if having slip disc problem.
- Avoid if suffering from spondylosis.
- Avoid if having internal organ problem.

Practice Questions :

Q.1 Explain the procedure and benefits of pavanmuktasan in detail.

$1\frac{1}{2} + 1\frac{1}{2} = 3$

Q.2 What are the benefits and contraindications of Paschimottanasana and Bhujangasana.

$1\frac{1}{2} + 1\frac{1}{2} = 3$

Q.3 Describe the procedure, Benefits & contraindications of ardhmatseyndrasan.

$1 \times 3 = 3$

-
4. Diabetes is common life style discase. How it can be prevented through practicing of different asanas. $1 \times 5 = 5$
 5. More than 7% of Indians populations suffering from diabetes. Explain two asana in detail, which can help to control diabetes. $2\frac{1}{2} + 2\frac{1}{2} = 5$
 6. Enlist the asanas which are used to control diabetes. Briefly discuss two of them to control diabetes. $1 + 2 + 2 = 5$

3.4 Asthma

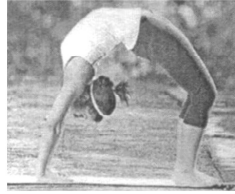
Asthma, a disease associated with the respiratory tract swelling occurs, which makes the tracts very sensitive and makes this process pungent with the touch of any effective thing.

These reactions cause contraction in the tubes this reduces the amount of air in the lungs. Due to which it become difficult to breath.

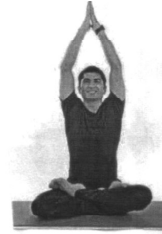
Common symptoms of asthma are coughing, heavy breathing. chest tightness, fatigue, pain in hands, feet, shoulders and back. Reasons are dust, smoke, air pollution, pollengrains, animals skin, hair or feather etc. are the main reasons. Asthma may be controlled by sukhasana, chakrasana, Gomukhasana, Bhujangasana, paschimo-ttasana, matsyasana.



Sukhasana
The Easy Sitting Pose



Chakrasana



Parvatasana



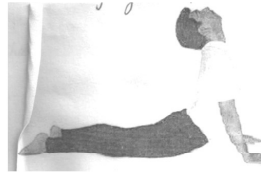
Gomukhasana



Paschimottasana



Matsyasana



Bhujangasana

Objective Multiple Choice Questions (1 Marks)

Q.1. A disease associated with respiratory tracts is known as

- (a) Diabetes (b) Obesity
(c) **Asthma** (d) Back pain

Q.2. Choose the asana which helps to control Asthama :

- (a) Pavanmuktasana (b) Trikonasana
(c) Hastasana (d) **Chakrasana**

Q.3. Coughing, heavy breathing, chest tightness are the symptoms of:

- (a) **Asthma** (b) Diabetes
(c) Obesity (d) Back pain

Long Answer Type Question (5 Marks)

**Q.1. Enlist the asanas which are used to control Asthma.
Explain any two asana in detail. 1 + 2 + 2 = 5**

Ans. List of asana which helps to control asthma :

1. Sukhasana
2. Chakrasana
3. Parvatasana
4. Paschimotanasan
5. Gomukhasana
6. Bhujangasana

1. Gomukhasana : This asana gets its name because while doing this asana body resembles a cow face pose. In English it is called the cow face pose.

Procedure :

- Sit in sukhasana or dandasana pose.
- Place the ankle of left leg near right but under the anus.
- Place the right leg over the left leg so that knees should place over left knee.
- Sweep your left hand behind your back, facing palms upwards.
- Sweep your right hand over the right shoulder, bend your elbow and place it behind your back.
- Now inter lock fingers of both hands behind your back.
- Now stretch both hands in their respective directions. Look straight.

-
- Repeat with changing leg position.

Benefits : Helps in curing Asthma, reduce weight makes body flexible and attractive.

- It helps to make spine strong and erect.
- Helps to make abdominal organ function well.
- Helps to reduce obesity.
- Diaphragm improves and keep away from all kinds of intoxication.
- Upper body becomes flexible and strong.
- It helps to circulate blood to the entire body.

Contraindications :

- Person having stiff shoulder should avoid this.
- Any kind of hip problem or knee, hamstring and quadricep should be avoided.
- If one has to sciatica problem, one should avoid this pose.
- Avoid if any neck or shoulder injury.
- Avoid to perform or practice during pregnancy.

2. **Parvatasana :** While performing this asana body resembles like a mountain that's why its named as parvatasana. It is a very easy asana.

Procedure : Sit in padmasana pose on ground.

- Raise both hands by side ward while inhaling and joint together upward above the head.
- Exhale and come at intial position.

Benefits:

- It help to spinal problem.
- Strengthness the muscles of arms.
- If increase the blood flow to the brain.

Contrain dications :

- It should not be practised if one has wrist, hip or ankle injury.
- It should not be practice while spinal injury.

3. **Matsyasana :** If this asana is performed in water body can float easily thats why it is called matsyasan.

Procedure : Sit in padmasana pose.

Take support of your elbow and lie on your back bend your neck with support of your hands, and try to touch your fore head to the ground.

- Hold toes of the feet firmly with both hands and touch the ground with the elbows.
- Stretch the stomach as up as possible.

Benefit : This asana is very useful for asthma patients provide relief from indigestion and other disgestive problems, keep the blood clean. Helps is curing diabetes. Helps in cough and respiratory problems, makes body and face attractive.

Contraindication of Matsyasana :

1. Avoid this posture if any kind of neck injury.
2. Any kind of blood pressure.
3. If having migrane.
4. If having spondylits, neck or back pain.
5. If pregnancy is there.

4. **Sukhasana :**

Pre Stage : Keep both feet in front and sit straight.

Method : Sukhasana is simply sitting in the normal form.

Keep the left foot folded under the right leg's thigh.

Fold right and placed it under the Left thigh.

Keep head, neck and waist straight. Keep both hands in the meditation (palms stacked up in lap) posture.

You can use it for longer periods of meditation.

One Can change feet for sitting.

Benefits:

1. This posture can be used for a long time during mediation and study, etc.
2. Straightening the waist gives strength in the legs. Pain is removed and person can perform other postures like Ardh Padmasan and Padmasana.

Contraindications :

1. Avoid if arthritis
2. Avoid if backache.
3. Avoid if spinal disc problem.
4. Do not practice if migrane or Anxiety occures.
5. Do not practice if week digestive system.

5. **Chakrasana :**

Procedure : Lie down on the back an make both leg straight.

-
1. Bend your knees so that the soles of your feet are on the floor.
 2. Your hands must be placed behind your shoulders and fingers pointed towards your shoulders.
 3. Then, press your feet and palms, and lift your entire body off the mat.
 4. Hands and feet are half feet apart. Head hang gently between hands.
 5. Make the body stretch towards the top so that it becomes circle shape.

Benefits: It affects the whole body, which gives flexibility in muscles and bones & increases blood circulation, Relieve waist pain. Increases the supply of oxygen in the lungs. The overall functioning of the body increases.

Contraindication :

1. Avoid to practice if any back injury.
2. Someone having heart problem should not do this pose.
3. If having high/ low blood pressure, do not try this
4. Someone undergone with cataract surgery, avoid this Asana.
5. Do not practice if any cervical injury.

Practice Questions :

1. Define Asthama. Write the procedure and benefits of Chakrasana which helps in curring Asthma. 1 + 2 = 3
2. Enlist two asana for Asthma. Write the procedure and contraindication of any one of them. 1 + 2 = 3

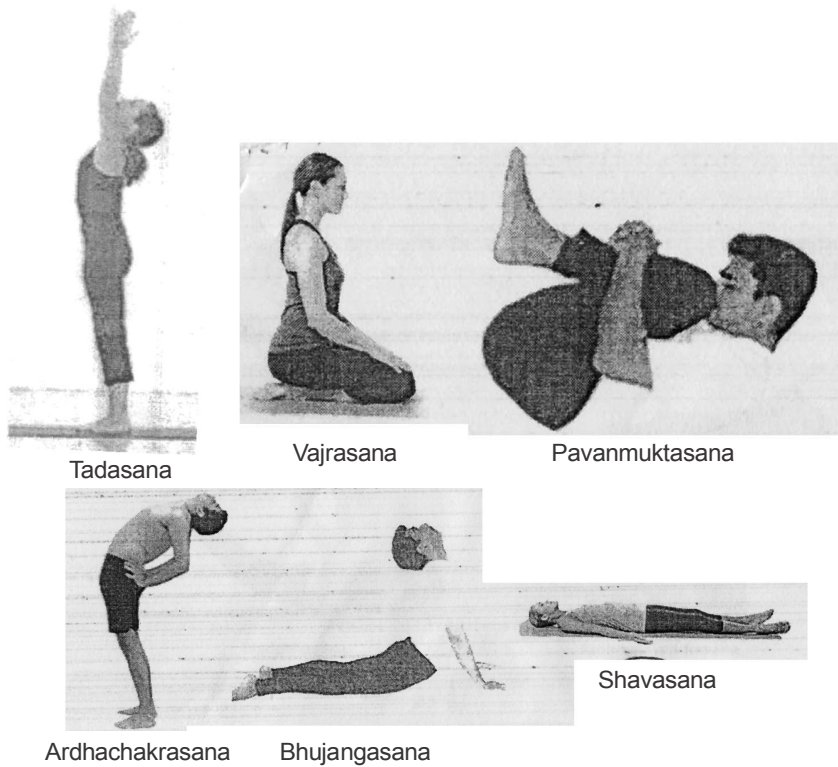
-
3. Gomukhasana and Sukhasana play an important role to cure the one of life style disease "Asthma". Discuss in detail. $1\frac{1}{2} + 1\frac{1}{2} = 3$
 4. Elaborate the importance of Paschimotanasan and matsyasana to cure Asthma. $2\frac{1}{2} + 2\frac{1}{2} = 5$

Hypertension

High blood pressure. A condition in which the strength of blood against the walls of the artery is very high. Reasons for high blood pressure increased with age, Genetic, obesity, lack of physical activity, smoking, alcohol, more intake of salt in food, tension or mental stress, diabetes, pregnant women are more prone to high B.P. All these factors can lead to high blood pressure.

The main function of the heart is to supply pure blood to the various parts of the body through different arteries when the heart contract it pushes the blood through blood vessels and consequently the blood pressure increase in arteries this pressure is known as systolic blood pressure it is represented by the first number the pressure between two heartbeats is called diastolic blood pressure it is represented by bottom or second number these two number of blood pressure are measured in mm/Hg. Unit means millimeter of mercury. The normal blood pressure of an adult is considered 120/80mm/Hg. The person whose blood pressure readings are beyond 140/90 mm/Hg are said to be having hypertension.

High blood pressure can be controlled by doing the following yoga asanas Tadasana, vajrasana, pavanmuktasana, ardha chakrasana, bhujangasana, shavasana.



Objectives/Multiple Choice Questions (1 Marks)

Q.1. The pressure of blood increase on the wall of aorta is known as _____

- (a) Back pain
- (b) Obesity
- (c) **Hypertension**
- (d) Asthma

Q.2. Select the asana which helps to reduce hypertension

- (a) Tikonasana
- (b) Chakrasana
- (c) **Shavasana**
- (d) Sukhasana

Q.3. Which asana is not practised in hypertension :

- (a) **Vakrasana**
- (b) Vajrasana
- (c) Tadasana
- (d) Ardhchakrasana

Short Answer Type Questions (3 Marks)

Q.1. Elaborate the role of Ardhchakrasana and Shavasana in preventive the hypertension.

Ans. Asana plays an important role to prevent the various life style disease. Following are the role of ardhchakrasana and Shavasana:

1. Ardh Chakrasana :

Procedure : Stand straight and keep your hand close to your body.

Place your hands on your buttocks.

Breathing gently, bend backwards while keeping the knees straight.

Stay for sometime in this position.

Come back to starting position.

Benefits : Waist become flexible.

Strengthen back bone.

High BP comes to normal.

Tones the arms and shoulder muscles.

Precautions : Keep knees straight while bend backwards.

Shavasana : Lie flat on your back.

Keep your arms at your side and your palms facing up.

Legs should be separated and just relax.

Start concentrating from your head to your feet and relax each part of your body and feels that you are just like a dead body.

Benefits : Relax whole body.

Release stress, fatigue, depression & tension.

Calms the mind and improves mental health.

Precautions : Place where Shavasana is performed should be peaceful with no noise at all.

Practice Questions.

- Q.1. Elucidate “Hypertension”. How Parvatasana and Shavasana helps to reduce hypertension.**
- Q.2. Write about tadasana and ArdhaChakrasana how they help to prevent the hypertension.**
- Q.3. Enlist the asana which helps to reduce hypertension. Briefly explain the procedure of any one of them.**
- Q.4. Briefly explain the three asana for “hypertension”.**
- Q.5. Define “Hypertension”, enlist the asanas used for hypertension. Briefly explain any two asanas used for hypertension.**

3.6 Back Pain

Back pain is a wide spread problem people around the world are suffering from various problems due to changing habitat and changing lifestyle. Back pain is one of them about 95% of the people who sit in one place and 60% of the rest of the people are upset with back pain and number of women are more in them.

The main reasons for this are long sittings, the habit of modern equipment, being more fashionable, lack of knowledge regarding right way of exercising, weight lifting, wrong way of sleeping, due to an accident problem can arise.

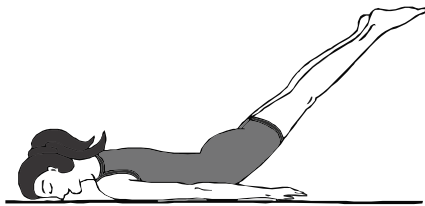
Back pain can be prevented by doing asanas as— Tadasana, vakrasana, bhujangasana, shalabhasana and ardh matsyendrasana.



Tadasana



Vakrasana



Shalabhasana



Bhujangasan



Ardhmatsyendrasana

Objectives/ Multiple Choice Questions (3 Marks)

Q.1. Stretching of spinal muscles associated with—

- (a) **Obesity** (b) Diabetes
(c) Back pain (d) Hypertension

Q.2. Simple spine twist is known as

- (a) Salabhasana (b) Bhujangasana
(c) **Vakrasana** (d) Tadasana

Q.3. Which asana is used for back pain

- (a) Trikonasana (b) Paschimotasana
(c) Chakrasana (d) **Shalabhasana**

Q.4. Which asana is not used for “Back pain”.

- (a) **Pavanmuktasana** (b) Vakrasana
(c) Bhujangasana (d) Ardhmatsyendrasana

Short Answer Type Questions (3 Marks)

**Q.1. “Vakrasana and Shalabhasana helps in reducing pain”.
Justify.**

Ans. Vakrasana is done while sitting: In this asana back bone is twisted, that's why it named as vakrasana. This asana increases the flexibility, activeness to back bone

Procedure:

- Keep both feet in front and sit straight.
- Sit down stretching your legs forward on the ground.
- Bend your left leg and place it around the right knee.
- Keep spine straight, while exhaling bend towards left.
- Now place the right arm by the outer side of left knee and pull the left knee towards the body.

-
- Pull the knee so that it pressures on the stomach.
 - While exhaling, return to the initial position.
 - Repeat it from the other side its one complete cycle do it 3 to 5 times.

Benefits : It brings flexibility in back bone and make it healthy. Relieves stiffness from the back. Help in relieving back pain.

Shalabhasana : Shalabh means Locust in Sankrit in the end stage of the asana body shapes like a locust that's why it is named as Locust.

Pre Stage : Lie down on your stomach.

Method :

Lie on your stomach.

- Place your palms under you things keep ankles close to one another.
- Breath in and lift your legs upwards, while doing so your chin should rest on the ground.
- Hold this position for some time after that exhale and take down your legs in initial position.
- Repeat this for 3 to 5 times.

Benefits :

- This asana is very helpful in back pain. Increase flexibility reducing fat, helps in curing sciatica.

Long Answer type Questions (5 Mark each)

Q.1. Back pain is very common life style disease now a days. Which asana you will suggest to reduce "Back pain".

Ans. Back pain is a widespread problem. People around the world are suffering from various problems due to changing habits and changing lifestyle. Back pain is one of them. About 95%

of the people who sit in one place and 60% of the rest of the people are upset with back ache. And number of women are more in them.

The main reasons for this in long sittings, the habit of modern equipment, being more fashionable, lack of knowledge of the right way of exercising, weight lifting, wrong way of sleeping, due to an accident and mental stress backache problem can arise. A person suffering from this problem can not do any work correctly. This is not a very serious problem but it is a very painful problem.

Back pain can be prevented by doing yoga. If someone is suffering from back pain, even after doing yoga, there will be enough relief in back pain.

Tadasana, vakrasana, bhujangasana, shalabhasana & ardhmatsyendrasana can be done in back pain.

Vakrasana : This asana is best for Back bone. It helps in making the spinal cord flexible and healthy.

Tadasana : This posture is very beneficial for back pain. If it is practiced in the right way, than back pain can be relieved completely in it, you drag yourself towards the top and feel the strain where there is pain.

Shalabhasana : Shalabhasana strengthens the waist and back. It enhances the flexibility of the back. Thereby reducing the back pain.

Bhujangasana : Bhujansana is also called cobra pose. Because in this, the next part of the body is raised like a cobra. Doing this asana gives relief in back pain. If it is practiced continuously then back pain can be relieved completely.

Ardh Matsyendrasana : This Asana named after yogi matsyendra nath. It helps in strengthening the back bone muscles and make them flexible. This posture is very beneficial for back pain.

Practice Questions.

Q.1. Explain the procedure of Shalabhasana and Ardhmatsyendrasana. **1½ + 1½ = 3**

Q.2. Explain any three asanas which is used to reduce the back-pain. **1 × 3 = 3**

Q.3. “Back pain can be reduced by practicing Asanas regularly”. Justify. **1 × 3 = 3**

Mislianeous Practice Questions :

Q.1. Match the following asana with life style disease.

- | | |
|-----------------|------------------------|
| 1. Diabets | (a) Chakrasana |
| 2. Obesity | (b) Ardhmatsyendrasana |
| 3. Asthma | (c) Shavasana |
| 4. Hypertension | (d) Hastasana |

Q.2. Match the following disease with related cause.

- | | |
|-----------------|-------------------------|
| 1. Diabets | (a) Accumulation of fat |
| 2. Hypertension | (b) Insuline |
| 3. Asthma | (c) Blood pressure |
| 4. Obesity | (d) Respiratory tracts |

Q.3. Pick the correct one life style disease :

- | | |
|-----------------|------------|
| (a) Tuberclosis | (b) Cancer |
| (c) Back pain | (d) HIV |

-
- Q.4. Enlist the life style related disease. Write the procedure of Vajrasana and vakrasana. 1 + 2 = 3**
- Q.5. Diabetes and obesity is most common life style diseases in modern era. Write procedure, Benefits and contraindication for any one asana for each disease.**
- Q.6. Asana plays an important role to prevent life style diseas, Justify. How hypertension and back pain can be minimise by practicing Asana.**

UNIT - 4

Physical Education and Sports for CWSN (Children with Special Needs–Divyang)

Key Points :-

- 4.1 Concept of disability & disorder
- 4.2 Types of disability its causes & nature Cognitive disability, intellectual disability, physical disability
- 4.3 Type of disorder (ADHD, SPD, ASD, ODD, OCD) its causes & Nature
- 4.4 Disability Etiquettes
- 4.5 Advantage of physical Activities for children with special needs
- 4.6 Strategies to make physical activities assessable for children with special needs.

4.1. Concept of Disability & Disorder

Disability :- Any disadvantage due to which an individual is not able to perform the activities of normal human life is known as disability.

Disorder : Any disruption due to which an individual is not able to perform his daily human activities is known as disorder.

Multiple Choice Questions (1 Marks)

Q.1. Which is not a disability :

- (a) Hearing (b) Speech
(c) Vision (d) ADHD

Q.2. Most suitable word used for disable person:

- (a) Handicapped (b) Retarded
(c) Divyang (d) Blind

Q.3. Olympics for physical handicapped categories

- (a) Winter Olympics (b) Paralympics
(c) Summer olympics (d) Deefolympics

Q.4. Which is a disorder:

- (a) Disrupts a person's performance
(b) It is a mental illness
(c) Lethal Gradually
(d) It is a physical inability

Short Question Answer [3 Marks 80-90 words]

a. Differentiate between Disability and Disorder

- | Disability | Disorder |
|---|--|
| (1) It is a physical, mental, cognitive, condition that impairs, interferes with or limit a person's ability to engage in certain | 1. It is an illness or dysfunctional factor that affect or disrupt the person physical or mentally |

action of participate in
daily activities and
interaction

- | | |
|---|--|
| (2) There is no chances to become normal | 2. High chances to become normal |
| (3) Disability is concerned with various parts of the body | 3. Disorder is concerned with mental ability |
| (d) Disability is 3 tyres a physical, cognitive & intellectual disability | 4. Disorder is 5 types ADHD, SPD, ASD, OCD & ODD |

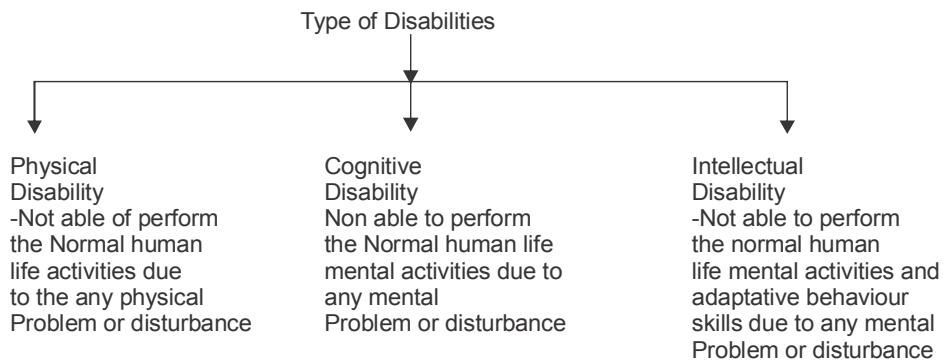
Practical question : (3 marks 30 to 50 words)

- a. Briefly discuss the concept of disability?
- b. Explain the concept of disorder?

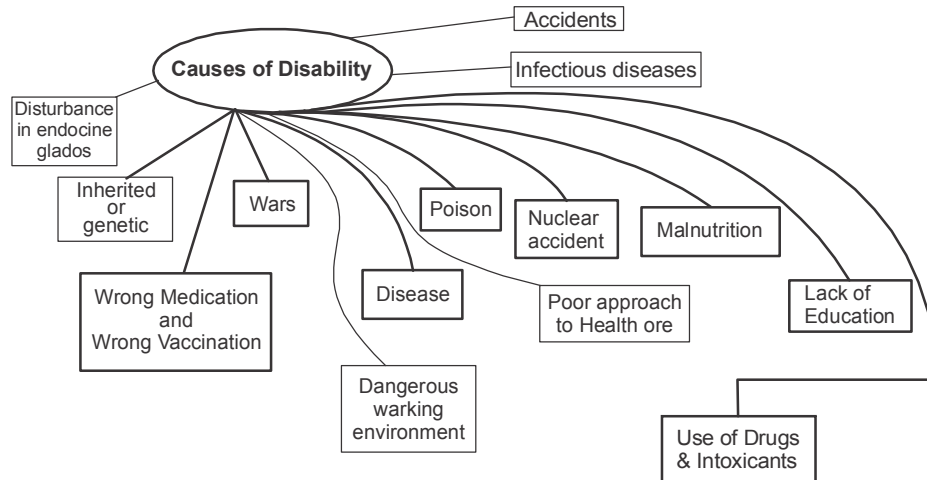
(Long Answer Question–5 Marks–150–200 Words)

- a. Discuss the concept and nature of disability.

4.2 (A)



4.2 (B)



4.2 (C) Nature of Disability

- A. Cognitive disability** in children ranges from profound intellectual impairments with minimal functioning to mild impairments in specific operations. Cognitive disability is an inclusive term used to describe impairment in an individual's mental processes that lead to the acquisition of information and knowledge, and drive how an individual understands and acts in the world.
- B. The nature of intellectual disability:** is the onset of both intellectual and adaptive functioning deficits the developmental period which refers to the span of time prior to the age 18. Children with this disorder may evidence delayed developmental milestones, while milder levels may not become identified until school age. Intellectual disability is non-progressive and generally lifelong; however, concurrence with specific genetic disorders may manifest with periods of cognitive deterioration.
- C. A physical disability** is any condition that permanently prevents normal body movement and/or control. In the early

years, children may have some difficulties in learning to move skillfully. This is not unusual. However, for some children, the muscles and nerves that control body movements may not be properly formed or may become damaged causing a physical disability. There are many different types of physical disabilities.

Multiple Choice Question–1 Mark

1. Cognitive disability is not dealign with disrupt of
(a) Learnign [] (b) speaking []
(c) solving skills [] (d) walking []
2. Disability is caused by
(a) Heredity [] (b) Accidents []
(c) Balance diet [] (d) **both (a) & (b)** []
3. Types of disability are –
(a) mental disability [] (b) physical disability []
(c) emotional disability [] (d) walking disability []
4. Physical disability is a condition which deals
(a) mobility or movement []
(b) speak & learn []
(c) Process of information []
(d) Calculation []
5. The main reason of Intellectual disability
(a) Vaccination []
(b) Malnutrition []
(c) consumes alcohol or drugs during pregnant women []
(d) Physical Activieites []

-
- | 6. A | B |
|-----------------------------|--|
| 1. Cognitive disability | a. Able to living life activities easily |
| 2. Ability | b. impairment of normal life tasks |
| 3. Disability | c. visual & hearing disability |
| 4. Physical disability | d. Reasoning & learning disability |
| 5. Intellectual Disability | e. memory & hyperactivity |
| (a) 1–d, 2–a, 3–b, 4–c, 5–e | [] |
| (b) 1–a, 2–b, 3–c, 4–d, 5–e | [] |
| (c) 1–e, 2–d, 3–c, 4–b, 5–a | [] |
| (d) 1–b, 2–c, 3–a, 4–e, 5–d | [] |

3 marks (30–50 words)

1. Discuss the type of disability?

Ans. Disabilities are mainly three types

(a) Physical (b) Cognitive (c) Intellectual

(a) **Physical Disability:** A physical disability is a limitation on an individual's physical functioning, mobility, dexterity or stamina. Other impairments such as respiratory disorders, blindness, epilepsy and sleep disorders, which limit other factes of daily.

(b) **Cognitive Disability:** it is a neurological disorder that creates hindrance or obstruction for an individual to store, process and produce information. This ability can affect an individual's ability or capability or read, compute, speak and write.

-
- (c) **Intellectual Disability:** Intellectual disability is a disability characterised by significant limitations both in intellectual functioning (reasoning, learning, problem solving) and in adaptive behaviour, which covers a range of everyday social and practical skills. Indeed, this disability is related to the individual's thought processes, communication, memory, learning, problem solving and judgement.

Long Answer Question (5- Marks - 150 to 200 words)

1. **Elaborate the causes of disability?**

Ans. Elaborate the causes of disability?

Causes of Disability

There are various causes of disability that are stated below.

1. **Genetic Causes.** Some disabilities are known to be inherited such as spinal muscular atrophy and muscular dystrophy. Abnormalities in genes and genetic inheritance cause intellectual disability in children. Sometimes diseases, illnesses and over exposure to X-rays may cause genetic disorder.
2. **Poverty.** Poverty is one of the major causes of disability. Generally, it is seen that poor persons are the most vulnerable to disability because they live and work in unsafe environment with poor sanitation. They don't have good living conditions. They usually have little access to education, safe drinking water and proper nutrition.
3. **Mental Health Problems:** Mental health problems such as depression, bipolar disorder, etc., may lead to disability. As a matter of fact, the causes of mental health

problems are very difficult to diagnose. They tend to be some of the most misunderstood disabilities.

4. **Accidents:** Nowadays, life is so fast that accidents may occur anywhere, anytime and to anyone. These accidents may happen at workplace, on the roads or in the air. These accidents may lead to disability.
5. **Infectious Diseases:** Infectious diseases may also cause disabilities. If the immunity power of a child is low, he is susceptible to fall sick or contract more serious illnesses. If a child is not immunised well, he becomes vulnerable to infectious diseases like mumps, which can cause hearing impairment or polio, which can cripple the child.
6. **Disturbance in Endocrine Glands:** Disturbance in endocrine glands may also lead to disability. Owing to such disturbance, a child may suffer from various physical and mental deficiency.
7. **Malnutrition:** Malnutrition is another significant cause of disability, especially our country. If a child does not get appropriate nutrition, he may be physically weak. Even deficiency of calcium leads to malformation of bones. Deficiency of iodine may diminish the growth of body. Similarly, deficiency of vitamin 'A' may cause blindness, in children. Deficiency of vitamin B₁₂ may lead to loss of memory and cause paralysis.
8. **Poor Approach to Health Care.** Many disabilities can be prevented easily, if it is proper access or approach to health care facilities. Sometimes, good health care facilities are not available during difficult

labour and birth. It may cause a baby. To be born with a disability such as cerebral palsy. Professionally trained persons could handle such emergencies. They can prevent babies from being born with such disabilities. Proper immunisation can also help in preventing many disabilities. Usually people who live in remote areas, do not have proper access to health can facilities, and thus, sometimes babies suffer disabilities.

9. **Nuclear Accidents.** Many persons have suffered after being exposed to radiation. It nuclear radiations has also been increase in the number of children born with cognitive disabilities such as Down Syndrome.
10. **Toxic Materials Pesticides Insecticides:** Toxic materials like lead and mercury, etc. found in various products, use of insecticides and pesticides, other harmful chemicals may cause disabilities in people and birth defects in babies. As a matter of fact such toxic materials may cause damage to brain which ultimately leads to disabilities.
11. **Illnesses:** The illnesses like cancer, heart attack, diabetes, etc., cause a number of long-term disabilities. Arthritis, back pain, musculoskeletal disorders, etc., are also significant causes of disability. Some illnesses to pregnant woman may cause physical or learning problems to her baby when born.
12. **Lack of Education:** Lack of education may lead to disability. Generally, labourers are not educated. They fall prey to certain diseases which can be avoided

by using scientific methods or by taking precautions. But due to ignorance they do not adopt such precautionary methods. Hence, their chances to get a disability are rised.

13. **Wars.** It is usually seen in wars that the most of the civilians are killed or disabled along with the soldiers. Bomb explosions cause people to become deaf, dumb and lose their limbs. Not only the physical health but mental health of the individuals is also badly affected by nuclear, biological and atomic weapons.
14. **Medicines and Vaccines.** No doubt medicines and vaccines are essential to protect health and prevent disability but there are a number of practitioners in the medical field who are not qualified or registered. They don't take proper care while dealing with patients. The use of unclean syringes may cause serious diseases like hepatitis or HIV/AIDS. Improperly stored as well as wrong vaccines may cause allergic reactions, poisoning and deafness to child.
15. **Dangerous Working Enviromment.** If individuals work in factories, mines or in agricultural fields under improper working environment, they may be exposed to dangerous machinery, tools or chemicals and wide variety of health hazards. In such conditions they may get disabilities on the long-run.

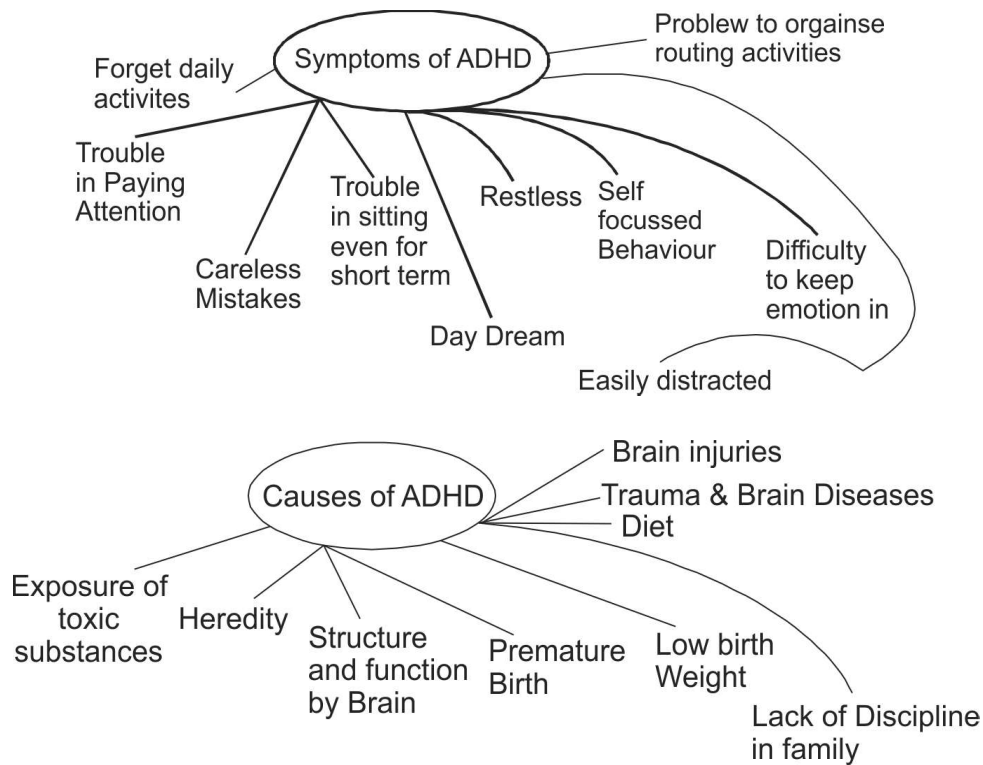
4.3 Type of Disorder

1. ADHD (Attention Deficit Hyper activity Disorder)
2. SPD: (Sensory Procerssing Disorder)

-
3. ASD: Autism Spectrum Disorder
 4. OCD: Obsessive Compulsive Disorder
 5. ODD: Opposite Defiant Disorder

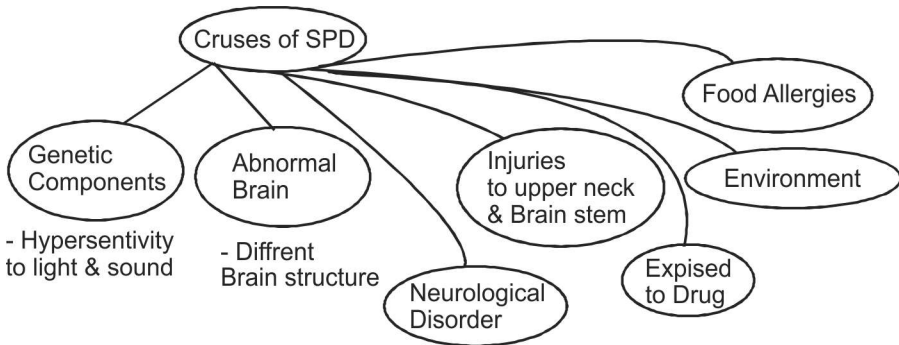
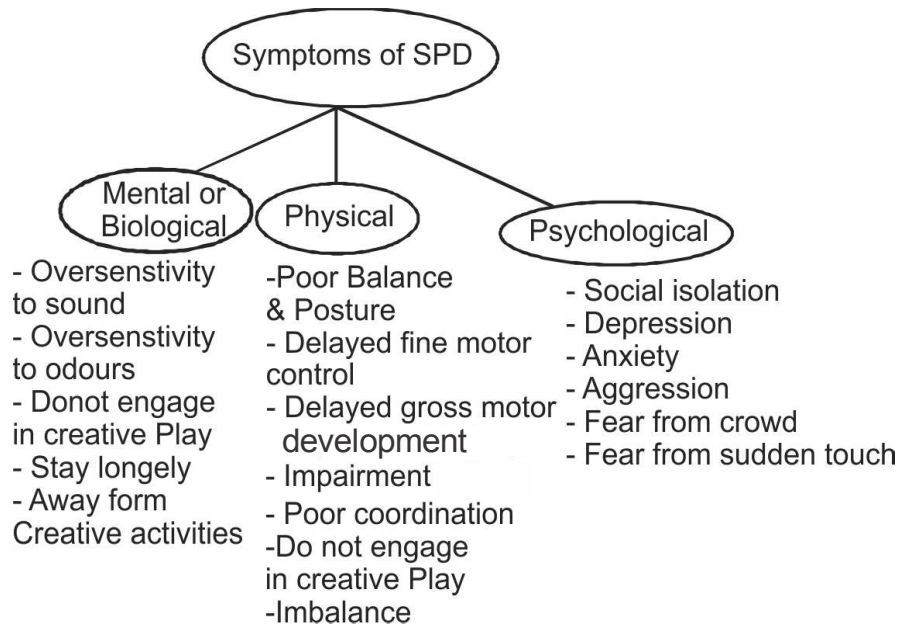
1. ADHD (Attention Deficit Hyper activity Disorder)

Attention dificity hyperactivity disorder is a group of behavioural symptoms that include in attentirness hyperactivity & impusiveness.



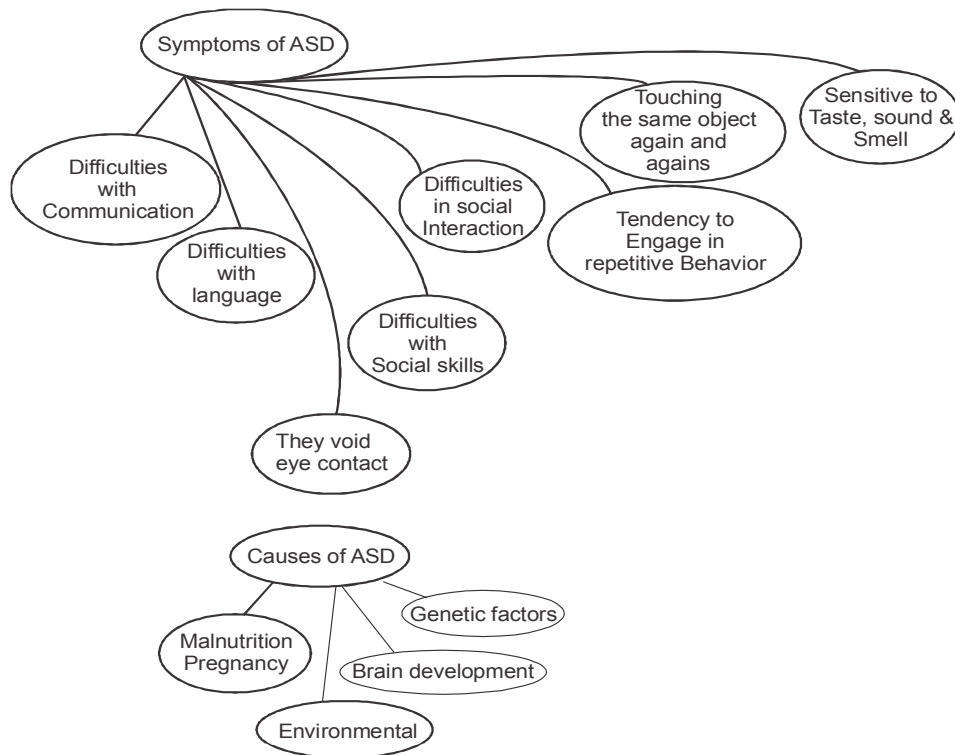
2. SPD: (Sensory Procerassing Disorder)

It is a conditon is which the brain has difficulty in reactiving & responding to information that can as in through the sensens organs.



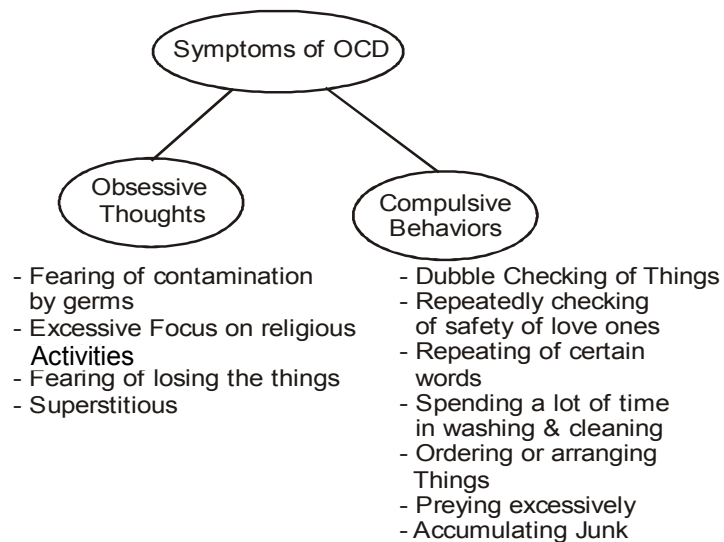
3. ASD: (Autism Spectrum Disorder)

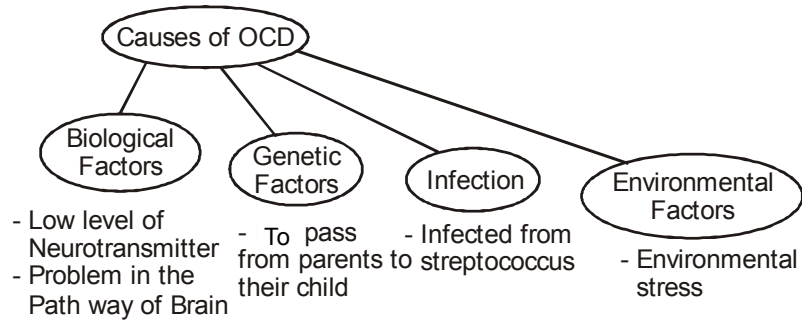
It is a neurological and developmental disorder in which have difficulty with communication, language, social skill and behaviour.



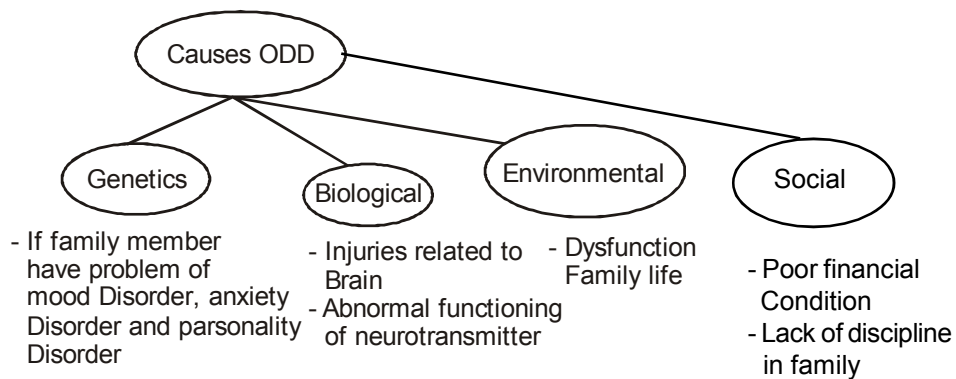
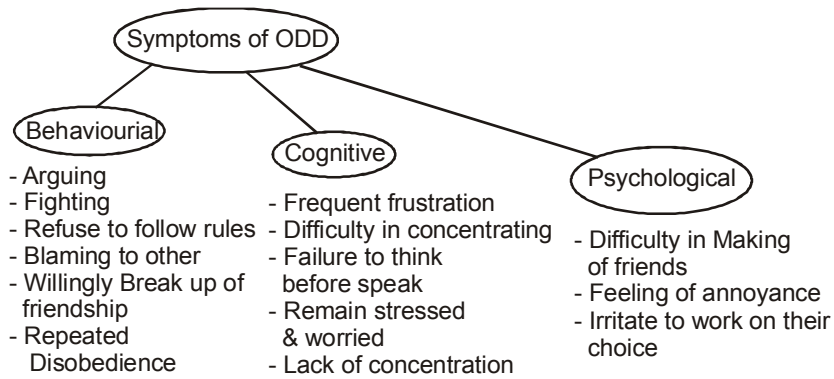
4. **OCD: (Obsessive Compulsive Disorder)**

This is a mental disorder that causes repeated unwanted thoughts.





5. ODD: Opposite Defiant Disorder



Nature of Disorder:

1. Impairment in social Interaction and developmental language and communication skills,
2. Disorder usually concerned with Nervous system,
3. Behavioural Problems,
4. Limits to perform activities
5. Not Permanent,
6. Mostly gain by birth.

MCQ (Multiple Choice questions)

- a. SPD's expanded form is
 1. Special police department
 2. Special processing Disorder
 3. **Sensory processing Disorder**
 4. Sensory processing department
- b. Repeated Action are called
 1. ADHD
 2. **ODD**
 3. OCD
 4. ASD
- c. Child is not able to adjust within society is suffering from
 1. **ADHD**
 2. ASD
 3. ODD
 4. OCD
- d. Expanded form of ADHD
 1. Automatic deficit hyper disorder
 2. **Attention deficit hyper activity disorder**
 3. Attention disorder of hypoactive deficit
 4. Automatic disability high defect
- e. ASD is -----
 1. **Autism spectrum Disorder**
 2. Autism special disability
 3. Automatic special disorder
 4. Autism sensory disorder

-
- f. Disorder are not caused by ----
1. Heredity []
 2. Environment []
 3. Less Brain development []
 4. **Balanced food** []
- g. Expended form of ODD is
1. Opposite different disorder []
 2. **Oppositional deficient disroder** []
 3. Opposite different disability []
 4. Obsessive defect disability []
- h. Expended form of OCD is
1. Opposite compulsive defect []
 2. Obsessive compulsive disability []
 3. **Obessive compulsive disorder** []
 4. Opposite compare disorder []

3 Marks (80 to 90 words)

- 1. What is the nature of Autism Spectrum Disorder (ASD)?**

Ans. Autism Spectrum Disorder (ASD) is a complex neuro-behavioural condition that includes impairment in social interaction and developmental language and communication skills combined with rigid, repetitive behaviours. Children with autism may have repetitive, stereotyped body movements such as rocking, pacing or hand flapping. They may have unusual responses to people, attachments to objects, resistance to change in their routines, or aggressive or self-injurious behavior.

At times they may seem not to notice people, objects, or activities in their surroundings.

2. What is the nature of Oppositional Defiant Disorder (ODD)?

Ans. Children and teens with Oppositional Defiant Disorder (ODD) have behavioural problems, such as attention deficit disorder, learning disabilities, mood disorder (such as depression), and anxiety disorders. Some children with ODD go on to develop a more serious behavior disorder called conduct disorder. These children exhibit the habit of excessively arguing with adults, especially those with authority. They may actively refuse to complete with requests and rules and deliberately trying to annoy or upset others, or being easily annoyed by others. Blaming others for your mistakes and frequent outbursts of anger and resettlement are common among them.

3. What is the nature of Obsessive-compulsive disorder (OCD)?

Ans. Obsessive-compulsive disorder (OCD) is a potential disabling illness that traps people in endless cycles of repetitive thoughts and behaviors. People with OCD are plagued by recurring and distressing thoughts, fears, or images (obsessions) they cannot control. Such people used to have fear of dirt or contamination by germs or fear of causing harm to another or making mistakes. Fear of being embarrassed or behaving in a socially unacceptable manner or fear of thinking evil or sinful thoughts are become part and parcel of their life. Similarly, need for order, symmetry or exactness excessive doubt and the need for constant reassurance hunt them always.

Practice Questions

3 marks

1. Explain the causes of ADHD. $\frac{1}{2} \times 6$
2. Detail the causes of ASD? 1×3
3. Explain the symptoms of SPD $\frac{1}{2} \times 6$
4. Explain the symptoms causes of OCD. $1\frac{1}{2} + 1\frac{1}{2}$
5. Mention the symptoms and causes of ODD. $1\frac{1}{2} + 1\frac{1}{2}$

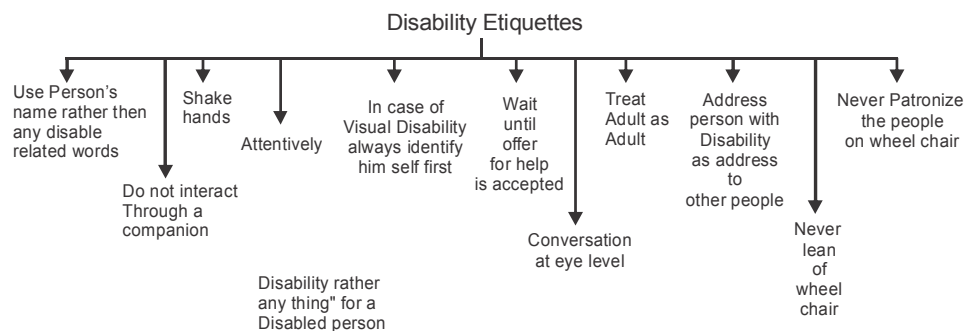
Long Answer Question (5 marks 150–200 words)

1. Discribe the symptoms and causes of ADHD in detail.
2. Explain the nature of SPD and ODD in detail.

4.4. Disability Etiquettes

Etiquettes acceptable behaviour in society with good manners & proper conduct.

Disability etiquettes, It is a set of guide lines dealing specifically with person with disabilities to approach.



a. **Select the correct A & B**

- | A | B |
|---------------------------|----------------------------------|
| 1. Visually impairment | a. behaaviour towards others |
| 2. Difficulty is speaking | b. tap the person onthe shoulder |
| 3. Hearing impairment | c. Introduce self first |
| 4. Etiquettes | d. Speech therapy |
- (a) 1–b, 2–d, 3–a, 4–c []
- (b) 1–c, 2–d, 3–b, 4–a []
- (c) 1–a, 2–b, 3–c, 4–d []
- (d) 1–d, 2–c, 3–b, 4–a []

1. **Explain the disability etiquettes in details? 1 × 5**

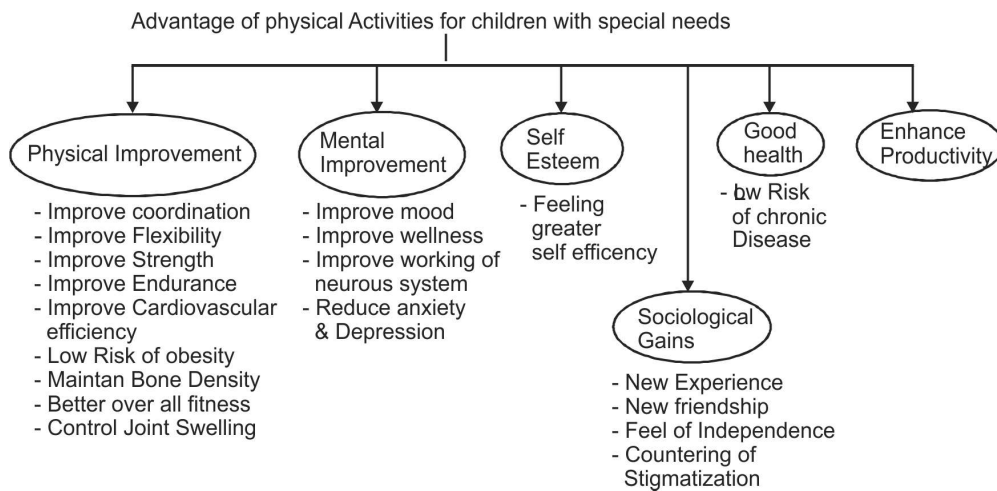
- Ans. (1) Term used:** We should not used the term as handicaped, mentally challenged, physically challenged & disabled person for any disable human being rather should called as “person with disability” or “DIVYANG”.
- (2) Companion:** Never talk to person with disability through a companion.
- (3) Shake hand:** When deals with person with disability always offer him to shake hand first.
- (4) Assistance:** If assistance is offered to the person with disability then wait until the offer is accepted.
- (5) Adult:** Always treat Adult as an adult.
- (6) Address:** Address the people who have disability by their first name only as address to other.

-
- (7) **Identify:** Your self and other person who are with you when interact to any person with disability or Divyang.
 - (8) **Patronize:** Never patronize the person on the wheel chair by tapping him on the shoulder or back.
 - (9) **Lean:** Never lean on the wheel char.

Practice questions 3 marks (80 to 90 words)

1. Mention the etiquettes to be kept in mind for person with vision loses.
2. Mention the etiquettes to be observed with wheal chair consumers?
3. Explain the etiquettes with persion with hearing loss.
4. Discuss the etiquettes for person with speach difficulties?

4.5. Advantage of physical activities for children with special need



1. Physical improvement CWSN by physical activities
 - a. Strengthen Heart []
 2. Spengthen Bones []

-
- 3. Not control body weight & blood pressure []
 - 4. Both (a) and (b) []

Q.7. Explain the advantages of physical activities for children with special needs.

Ans. **(1) Physical improvement:** Improvement in concentration.

- * Improvement in flexibility
- * Improvement in strength
- * Improvement in endurance
- * Improvement in cardiovascular efficiency
- * Decrease the Risk of obesity
- * Better over all fitness.
- * Improvement in Motor ability
- * Minimize joint swelling.

(2) Mental improvement

- * Improvement in mood
- * Improvement in wellness
- * Improvement the working of nervous system.
- * Brain release endorphins that help to feel good and ease from depression anxiety.

(3) Improved the sense of self esteem

- * feeling of greater self efficiency

(4) Sociological Gains

- * New experiences
- * New friendship

- * feel of independence
- * countering of stigmatization

(5) Good health

- * Low risk of disease

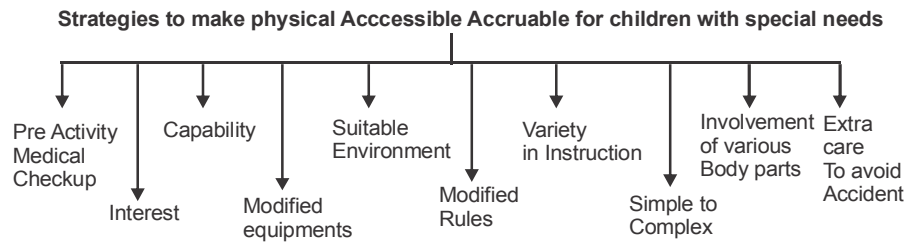
(6) Enhance Productivity

- * Improve the working efficiency

Practice Question (3 marks 90 words)

1. Explain any three benefits of physical activities for children with special needs? 1 × 3
2. How physical activities improve the mental & social status of CWSN? 1½ + 1½

4.6. Strategies to make physical activities for children with special needs.



(5 marks 150 - 200 words)

Q.1. Explain the strategies to make physical activities accessible for children with special needs?

Ans.

- 1. Medical Check-up:** First of all, it is essential to have a medical check-up of all the children with special needs or with various disabilities. Because without medical check-up, the teachers of physical education cannot come to know about the type of disability the child is facing. Indeed, if we really want to make physical activities

accessible for the children with special needs, we need to understand the type of disabilities of the children.

- 2. Physical Activities Must Be Based on Interests of Children:** Indeed, physical activities must be based on the interests, aptitudes, abilities, previous experience and limitations of children with special needs. So, the teachers of physical education should have a deep knowledge of limitations, interests and aptitudes of children. After that physical activities can be made accessible for children with special needs more easily.
- 3. Equipment Related to Physical Activities Should Be According to the Needs of children:** The equipments/ objects related to physical activities should be according to the needs of children. These equipment should vary in size, shape, colour and weight. These equipment should be according to the capability and level of children. A child with visual impairment should use bright coloured ball. A yarn should be tied to the ball to bring the ball back to children. So, various types of equipment must be provided for children with special needs.
- 4. Specific Environment Should Be Provided:** The area of physical activities should be limited as movement capabilities of children with special needs are limited. Specially, in case of children who have autism, they must be provided specific playing area because they may need some time to relax. Light and sound are also vital for making good environment for such children.
- 5. A Variety of Different Instructional Strategies Should Be Used:** For performing various types of physical activities, a variety of different instructional strategies such

as verbal, visual and peer teaching should be used. It can give children the opportunity to start learning on their own and become more independent. Pictorial books are also vital in terms of instructions regarding physical activities.

- 6. Rules Should Be Modified According to the Needs of Children with Disabilities:** In the beginning, rules of the physical activities should be simple but later on these rules can be modified according to the needs of the children. They can be provided extra attempt or time to perform a physical activity. They can also be given additional resting time before doing the next physical activity.
- 7. Children's Previous Experience Must Be Taken into Consideration:** For making physical activities more accessible for children with special needs, the concerned teacher of physical education should have comprehensive understanding and knowledge of children's previous experience about physical activities.

In conclusion it can be said that the above mentioned strategies are very significant to make physical activities accessible for children with special needs.

Practice Question (3 marks 80-90 words)

1. Distinguish between physical disabilities & Intellectual disabilities.
2. Discuss the things we keep in our mind when we prepare the activity plan for a person with disability.

3. Match the following

$\frac{1}{2} \times 6$

A

B

- | | |
|--|---------------------------|
| 1. Cognitive | a. Disorder |
| 2. OCD | b. Etiquettes |
| 3. Sympathy | c. Improvement techniques |
| 4. Physical activities | d. Disability |
| 5. Medical check-up | e. Paralympics |
| 6. Competition in sports
& games for CWSN | d. Strategies or plans |

Ans. 1-d, 2-a, 3-b, 4-c, 5-f, 6-c.

UNIT - 5

**Children and Women in
Sports**

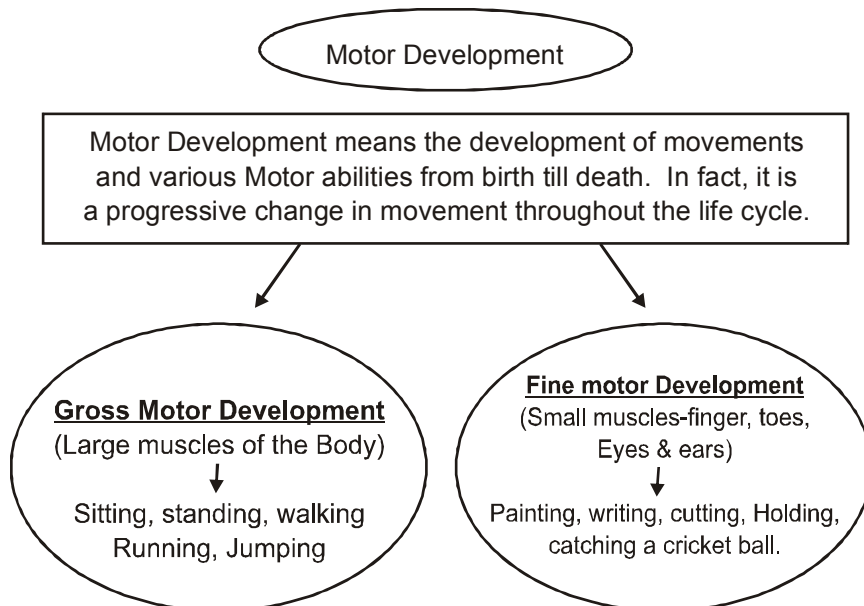
UNIT - 5

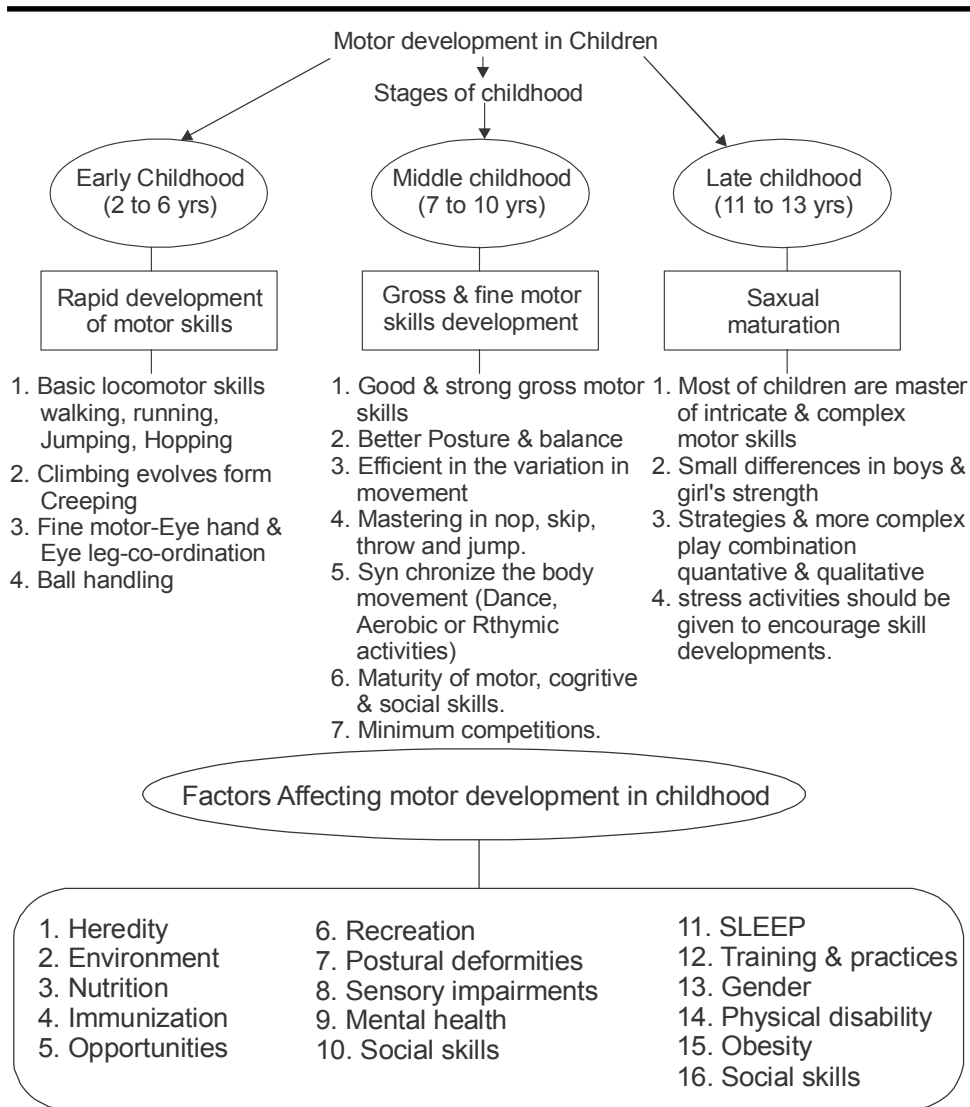
Children and Women in Sports

Key Points :-

- 5.1. Motor Development and factors affecting it.
- 5.2. Exercise Guidelines at different stage of growth and development.
- 5.3. Common postural Deformities knock knee, flat toot, Round shoulders, Lordosis, kyphosis, Bow legs and scoliosis and their corrective measures
- 5.4. Sports participation of women in India.
- 5.5. Special consideration (Menarch & Menstrual Disfunction)
- 5.6. Female Athlets Triad (Oestoporosis, Amenoria, Eating Disorders)

5.1 (A)





Multiple Choice questions (1 Mark)

a. Which development is motor development

- | | |
|-------------------------------|-----|
| 1. Bones & muscles | [] |
| 2. Sense Organs | [] |
| 3. Disorder development | [] |
| 4. Postural deformity | [] |

-
- b. Select the right no of motor skills development in children
1. 2 []
 2. 4 []
 3. 6 []
 4. 1 []
- c. Painting, catching activities are the examples of
1. Gross motor skill development []
 2. Fine motor skill development []
 3. Sensory skill development []
 4. Bone & muscles development []
- d. Choose the correct one
- | | |
|-----------------------------|-----------------------|
| 1. Big muscles activities | a. 3 to 6 yrs |
| 2. Small muscles activities | b. Running, jumping |
| 3. Early childhood | c. Painting, catching |
1. 1-a, 2-b, 3-c []
 2. 1-c, 2-b, 3-a []
 3. 1-b, 2-c, 3-a []
 4. 1-c, 2-a, 3-b []

Short Type Questions Answer (3 Mark 30 to 50 words)

Q.1. Elucidate the meaning of motor development.

Ans. Motor development refers to the development of a child's bones, muscles and ability to move around and manipulate his/her environment. In simple words, motor development means the development of movement various motor abilities from birth till death. In other words, motor development means the progressive change in movement throughout the life cycle. As a matter of fact, the ability to move is essential for human

development. Various motor movements or motor skill are essential for everyday life activities such as sitting, walking, running, climbing, catching or holding, jumping skipping or throw etc. Motor development can be divided into two types i.e., gross motor development and fine motor development.

Q.2. Mention types of motor development in child new.

Ans. **1. Gross motor development:** It involves the development of large muscles in the child's body such as sitting, walking, running, climbing etc.

2. Fine motor development. It involves the small muscles of the body specially in the small movement of the fingers and hands. For example, holding of javelin, discus, pole, catching a cricket-ball, smashing a volley ball and gymnastic exercises with or without apparatus etc.

Long Answer Type Questions Answer (5 marks 70 to 100)

Q.1. Explain any five factors affective motor Development in children.

Ans. The following are the most important factor which affect the motor development in children.

1. Heredity: Children get 'genes' for all the developments from their parents. It has been seen motor development of a child follows the same pattern as of their parents. These factors are related to body weight, size and strength.

2. Environmental Factors: Environmental factors such as physical and social factors are likely to effect the motor development. Encouragement, love and security help the child to take risk to explore fearlessly which leads to better motor development. Those children, who are not

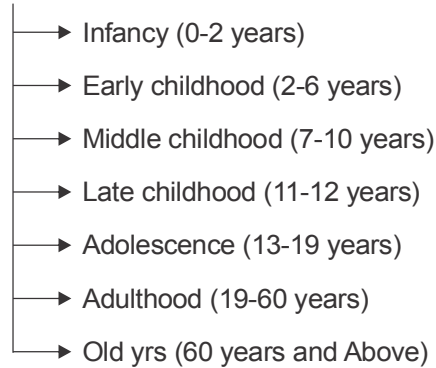
encouraged or motivated towards motor activities have slow rate of motor development.

3. **Nutrition:** Nutritive food promoter good motor development. If they get nutritive food, they get stronger & their development is good. If they dont get proper nutrition they are found to be less energetic & their motor development taken place slowly.
4. **Physical Acitivities:** Those children, who do not perform or practise physical activities regularly their motor development becomes slow. However, the physical activities must be according to the capabilities of children.
5. **Opportunities:** Children who get more opportunites to perform more activities, motor development is better in them. Opportunities to play give a better chance of developing sensory motor activities. If porper opportunities are not given to children their motor development cannot take place in those childern properly.
6. **Disability and Disease:** Disability and disease affects motor development. It reduces perfection in motor skills whereas healthy perosn gain faster motor development.
7. **Body Weight:** Overweight and obese children have less motor development whereas healthy child has more skill perfection.
8. **Mental Ability:** Motor development depends upon mental level, thus small children have less perfectionn.
9. **Regular Practice:** With regular practice motor development and perfection is gained.

10. Immunization. If mother and child both are immunized at a proper time it leads to good sensory motor development.

5.2 Exercise Guidelines at Different Stages of Growth and Development.

Stages of Growth and Development



1. Infancy (0-2 years)

- Exercise to develop head control, sitting & crawling,
- Gross motor activities should be promoted,
- Exercises for moving arms, legs, reaching to object,
- Exercises like throwing, catching & kicking a ball,

2. Early childhood (2 to 6 years)

- Exercises to develop competence in movement skills.
- Emphasis on participation not on competition.
- Activities related to fine motor skills.
- Minimum one hour regular medium exercise.
- Recreative & enjoyable methods of physical activities.
- Clean & safe environment.

3. Middle child hood (7 to 10 years)

- Exercise to develop fine & gross motor skills
- Exercises to build & improve co-ordination skills
- Exercises to develop synchronize the movements of body's parts.
- Introduction of major sports activities cognitives and social skills.

4. Later childhood (11 to 12 years)

- Exercise to develop body control, strength and coordination.
- Activities related to endurance should be avoided.
- Organised or team games to develop social-consciousness.
- Teach basic rules of sports i.e., fair, play, simple strategies.
- Introduction to concept of sport training.

5. Adolescence (13 to 19 years)

- Moderate to vigorous intensity physical activity.
- 60 min to several hrs everyday.
- Muscle strengthening exercises at least 3 times a week.
- Bone strengthening exercises and resistance exercises by weight training.
- Running swimming etc. for stamina building.

6. Adult hood (19-60 years)

- Moderate intensity physical every day.
- Muscles strengthening exercise at least 2 times a week.

-
- Bone strengthening exercises and resistance exercise.
 - Running, swimming, etc. for stamina building.

7. Old age (60 years and above)

- At least 5 days of moderate intensity activities such as walking, light-jump etc. It should be done for above 45-60 minutes. These actions should be done over a period of 10-10 minutes.
- Those who are more active than an elderly mature, They should do more than 30 minutes of high-strength activity, combined with the actions of moderate intensity. Such as climbing stairs, running etc.

Benefits of Physical Exercises on children

1. Builds healthy muscles,
2. Good Digestive Process,
3. Boost Energy level,
4. Improve neuro-muscular co-ordination,
5. Strengthen the lungs & Heart,
6. Control healthy weight,
7. Improve brain's function,
8. Reduce injuries and diseases risk,
9. Improve joint's flexibility,
10. Maintain good postures,
11. Strengthens bones & muscles,

Multiple Choice questions 1 Marks

1. Select the correct development during infancy state.
 - a. Moral values
 - b. Various senses
 - c. fine motor skill
 - d. Writing skills
2. Pre-school children learn things by
 - a. Imagination
 - b. Practice
 - c. Lecture
 - d. Repetition
- c. In the childhood, children's behaviour is mostly influenced by
 - a. Friends
 - b. School
 - c. Peer group
 - d. family
- d. In adolescence exercises help to
 - a. Strengthens of cardio-vascular system
 - b. Increases age toward old
 - c. Move away from society
 - d. Remove various senses

5. Choose the correct one

A

1. Infancy
2. Old age
3. Adulthood
4. Adolescence
5. Childhood

B

- a. 13-18 yrs
- b. 19 to 59 yrs
- c. 60 yrs and above
- d. 3 to 12 yrs
- e. 0-2 yrs

1. 1-a, 2-b, 3-c, 4-d, 5-e []
2. 1-e, 2-c, 3-b, 4-a, 5-d []
3. 1-e, 2-d, 3-c, 4-b, 5-a []
4. 1-b, 2-c, 3-d, 4-a, 5-e []

3 Marks Short Questions Answer (80-90 words)

Q.1. Explain briefly about the motor development in middle childhood?

Ans. Middle childhood: The period of middle childhood starts for 7th year and continues up till 10th year. During this period the changes, which take place are-

- a. Children become more energetic,
- b. Strong desire to engage in various physical movements and activities.
- c. Good eye-hand-leg coordination.
- d. Better in balance and postures.
- e. Motor skills are perfected and stabilized.
- f. Coordinative abilities develop at the high level, while the

flexibility develop at the slow level.

Q.2. Write the benefits of exercises during old age?

Ans. Benefits of exercises during old age

- In low the chances of heart-related diseases.
- Increases ability to work in daily life without fatigue.
- Slows down ageing process.
- The mood remains good, which reduces the change of depression.
- Physical capacity increases.
- Bones and muscles remain strengthened.
- Reduces the chance of many lifestyle related diseases, such as diabetes, cancer and high blood pressure, etc.

Q.3. Describe the exercises for Adolescence.

Ans. Adolescence (13 to 19 years): During adolescence, moderate to vigorous intensity exercises or physical activities should be performed for at least 60 minutes or little more daily.

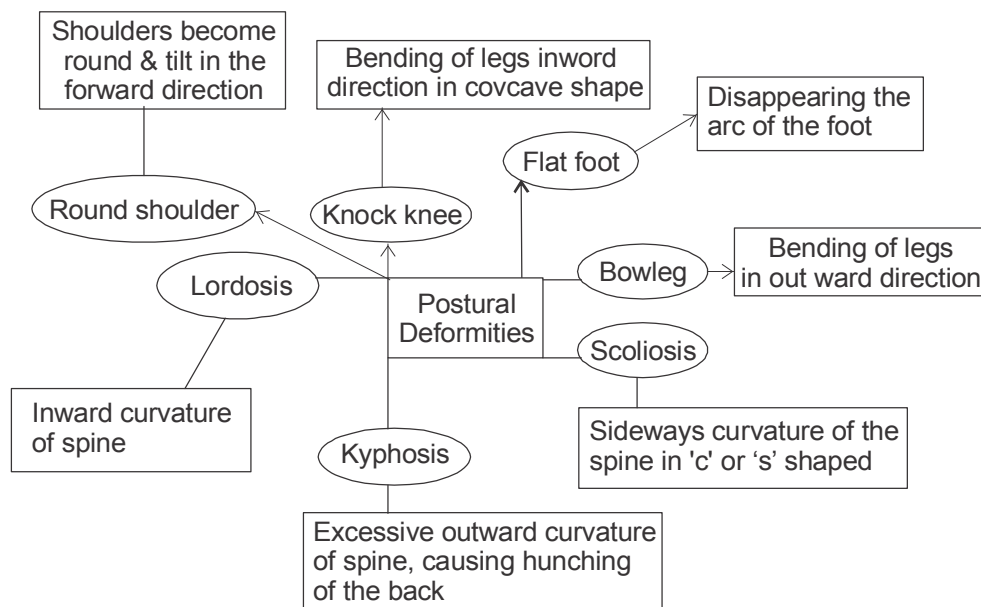
- Adolescents should also indulge in muscle strengthening exercises at least three days per week.
- They should also perform bone strengthening exercises.
- Adolescents or teenagers should avoid sedentary lifestyle.
- Physical activities or exercises such as running, gymnastics, push ups, jumping rope, playing hockey, basketball, swimming, tennis, and resistance exercises (weight training) are also very beneficial during adolescence.

Practice Questions (3 marks)

1. What exercises should be done in old age?
2. Describe the exercise for the adulthood?
3. Explain the benefits of physical exercises on the children?

5.3 Common Postural Deformities and their Corrective Measures

Postural deformity is the malformation of any components are body part or joint of the body.



Multiple Choice Question (1 Mark)

- a. Deformity means
 - (a) The malformation of any component of the body
 - (b) The malfunction of body's organs
 - (c) The malfunction of joints of the body
 - (d) De-shaped of muscles
- b. Lordosis deformity is

-
- (a) Lateral curvature of the spine []
- (b) Arch of sole of feet []
- (c) Abnormal backward curvature of the thoracic region of the spine []
- (d) Aggravated lower curvature of the lumbar region []
- c. Scoliosis is postural deformity where the person body position become-
- (a) Lateral curvature of the spine []
- (b) Arch of sole of feet []
- (c) Wide gap between the knees []
- (d) A side way curvature of the spine []
- d. What are the causes of "flat foot".
- (a) Weak muscles of the foot []
- (b) Improper shoes of carry heavy weight []
- (c) Healthy muscles of the body []
- (d) Both (a) & (b) []
- d. Choose correct one
- | | |
|---------------|------------------|
| 1. flat foot | a. wide gap |
| 2. Knock knee | b. inward bent |
| 3. Bow legs | c. Abnormal arch |
- (a) 1-a, 2-b, 3-c []
- (b) 1-c, 2-a, 3-b []
- (c) 1-c, 2-b, 3-a []

(d) 1-b, 2-a, 3-c []

e. **A**

1. Round shoulder

2. Scoliosis

3. Lordosis

4. Kyphosis

(a) 1-a, 2-d, 3-c, 4-b []

(b) 1-d, 2-b, 3-a, 4-c []

(c) 1-d, 2-a, 3-c, 4-b []

(d) 1-b, 2-c, 3-d, 4-a []

B

a. Abdomen is ahead of body

b. sideways curvature of the spine

c. Forward rounding of upper back

d. forward bending of shoulder

Short Answer Question (80–90 Words)

Q.1. Explain the symptoms & corrective measures of kyphosis?

Ans. **Symptoms:** Distance between the scapula increase.

– The length of the chest muscles become short.

-- Shoulders tilt forward.

-- Neck tilt forward

-- Upper Body wt. lean forward.

Corrective Measures :- In order to cure kyphosis such types of exercises are suggested, those increase the length of the pectorals and provide strength to the thoracic region muscles.

such as :

1 Back stroke swimming.

2 Chakrasana

-
- 3 Bhujangasana
 - 4 Dhanurasana
 - 5 Reverse bending on the swiss ball
 - 6 Reverse butterfly
 - 7 Pillow back extension
 - 8 Marjaryasana (cat pose)
 - 9 Adhomukha shananasana (Down word dog pose)
 - 10 Ustrasana (Camel pose)
 - 11 Half wheel pose (Ardha chakaarasana)

Any 3-syptoms - Corrective mesures.

Q.1 Mention the symptoms causes & corrective measurs of knock knee.

Ans. **Symptoms :**

- Knees touch each other in standing position.
- Knees touch each other in walking.
- Knees touch each other in running.

Causes :-

- 1 Obesity
- 2 Defficiency of vit D
- 3 Rickets
- 4 Early age walk or standing
- 5 Malnutrition



6 Enlargement of medial ligament of both knees quickly as compare to lateral ligament.

7 Lifting heavy load for long time.

Corrective measures :-

1 Horse riding

2 Padamasana

3 Standing with pillow between the knee

4 Use walking calliper

5 Straight leg lift.

6 Straight leg knee press on the towel placed under the knee

7 Side kicking the football

Any 2-symptoms, causes & corrective measures of knock knee.

Q.2. Discuss the symptoms, causes & corrective measures of flat feet?

Ans. **Symptoms :**

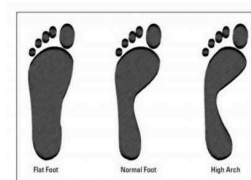
Pain in mid part of feet during standing & walking.

Disappearing the long arch of the feet

Complete feet print can be seen on the floor.

Causes

- Weakness of muscles & bones.
- over weight
- Obesity
- Carrying heavy load for long time.
- Injuries
- Malnutrition
- Faulty shoes.



Corrective Measures :-

- Writing with legs
- Walking or running on the sand.
- Jumping on toe
- Wearing proper shoes
- Pick the pebble with help of feet
- Walking on toe
- Tadasana
- Vajra-asana
- Ball under the feet game
- Wear the shoe with hankey inside the mid part of the feet.

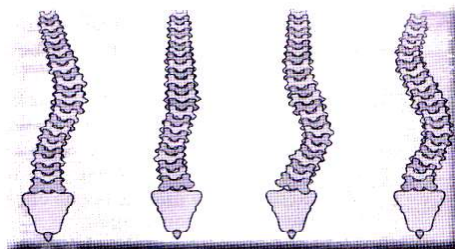
Long Answer Question (5 Marks 150-200 Words)

Q.1. Describe the symptoms, causes & corrective measuring of scoliosis?

Ans. **Scoliosis**

Postural adaptation of the spine in lateral direction is called scoliosis. In fact,

these are sideways curves and may be called scoliotic curves. Indeed these curves are identified as either convexity right of right convexity. A simple or single curve to the left or curve. Scoliotic curves may be found in 'S' shape.



(a) **Causes of Scoliosis:** Scoliosis may be due to many reasons but the main reasons are diseases in the joints of bones, under-developed legs, infantile paralysis, rickets, carrying heavy loads on one shoulder, unhealthy conditions, like inadequate lighting arrangement,

uncomfortable desks, partial deafness and wrong standing posture. It may be caused by congenited or acquired abnormalities of vertebrae, muscles or nerves.

(b) Precautions:

1. Balanced diet should be taken
2. Studying should be avoided in sideways bending position.
3. Avoid walking for the long time while carrying weight in one hand.

(c) Remedies: Scoliosis can be remedied by doing the following exercises.

1. Bending exercises should be done on the opposite side of the 'C' shaped curve.
2. Hold the horizontal bar with hands and lift your body or hange for some time.
3. Hold the horizontal bar with your hands and swing your body to the left and right sides.
4. Swim by using breaststroke technique.

Q.2. Discuss the symptoms, causes & corrective measure of bow legs?

Ans. Bow legs: There is a wide Gap between the kness.

Symptoms :

- Gap between the knees are increased
- Knee moves in outward direction in standing, walking & running.
- Shape of legs look like the bow.

Causes :-

- Inlargement of lateral ligment of both knee quickly as compare to medial ligament.

- Weakness of bones and muscle.
- Long time cross leg sitting.
- Faulty style of Walking.
- Obesity
- Rickets
- Early age standing and walking.



Corrective measures :

- Walking (feet twisted inward)
- Use of walking callipers.
- Massage therapy.
- Use those exercise which strengthen the muscles surrounding the knee such as leg extension in laying position.
- Use yoga strap to bind the legs together then make cow face posture & forward bending are recommended.
- Pilate exercise such as roll up & ballerina arms are effective to tone legs.
- Garud Asana, Ardh-Matsyendrasana

Practice questions (3 marks 80 to 90 words)

1. What do you mean by hump back. Explain the causes of it? (1 + ½×4)
2. Discuss the causes & corrective measures of scoliosis? (1½+1½)
3. Describe the precautions & remedial for flat foot. (½+½)

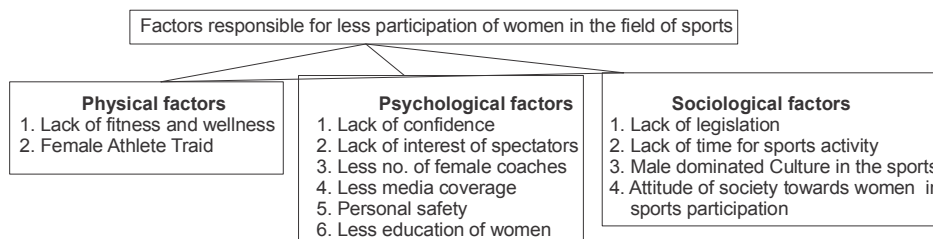
-
4. Explain the symptoms & precautions of round shoulders
($\frac{1}{2} + \frac{1}{2}$)
 5. Elucidate spine postural deformities. (1 × 3)
 6. Explain the deformities of knock-knee.
 7. Express your view on lower limbs deformities? (1 × 3)

5 Marks 150 to 200 words

1. Elaborate the factors causes postural deformities.
2. Suggest physical activities as correctivbe measures for postural deformities.
3. Describe the symptoms, causes & corrective measures for kyphosis. ($\frac{1}{2} + 1\frac{1}{2}$)
4. Describe the steps taken to protect scoliosis.

5.4 Sports Participation of Women in India

Sports Participation of women means women Particiapation in the field of sports and games. In 1952 Olympic games, the first India women took part. In 2000 Olympia games, karnam mallehwari (weight lifting) become the first Indian women to have won a bronze medal.



Multiple Choice Questions – 1Mark

1. Select the correct reason for less participation of female in sports.
(a) Low physical fitness []

(b) Lack of education []

(c) Good Legal system []

(d) (a) & (b) both []

2. Select the correct reason to improve participation of female in sports

(a) Good legal system []

(b) Female role model []

(c) Both (a) & (b) []

(d) Improper motivation []

Long Answer Question–5 marks (150 to 200 words)

1. Express the reasons for women to have less participation in sports?

Ans. 1. Lack of legislation

2. Lack of time

3. Lack of self-confidence

4. Male dominated cultural of sports

5. Lack of interest of spectators

6. No media coverage of women's sports

7. Lack of female sports person as role models

8. Lack of fitness & wellness movement.

9. Lack of education among women.

10. Attitudes of society towards women's sports participation.

11. Lack of personal safety.

12. Lack of proper scientific equipments & facilities.

13. Sports & games are considered masculine.

14. Depression & Aggression level.

15. Competitiveness.

2. Elucidate the steps to improve participation of women in sports & games.

Ans. The steps to improve women participation in the field of sports and games:

1. Motivation and inspiration to women for participation.

2. Support from family and parents.

3. To organise camps, seminar and workshops.

4. To provide knowledge and media coverage.

5. Educating women at grass root level for participation.

6. Provide better infrastructure and facilities.

7. Ensuring safety and security of women.

8. More opportunity for competition.

9. Develop new techniques and environments.

10. To build physical and psychological strength.

11. Healthy and balance food.

12. Better incentives and awards.

13. Change in attitude and perception at village level.

14. Equality and community mobilizing.

15. Development of self Confidence.

16. Financial help

17. Employment and career

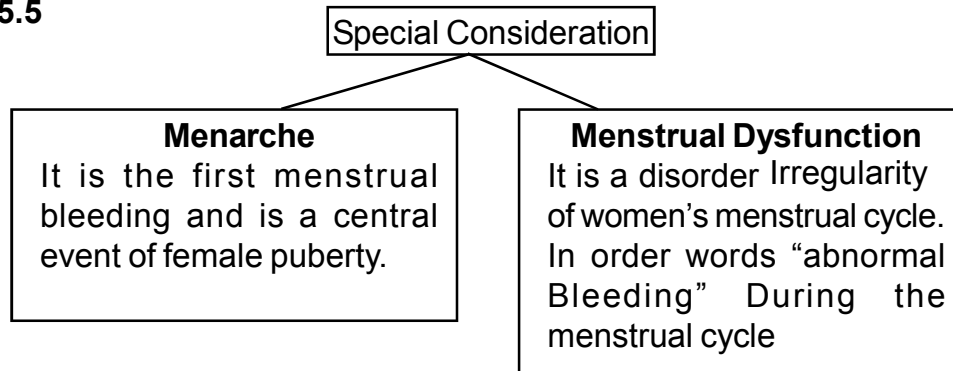
18. Designing and implementing government policies.

Parctice Questions

Short Answer Question–3 Marks (80 to 90 Words)

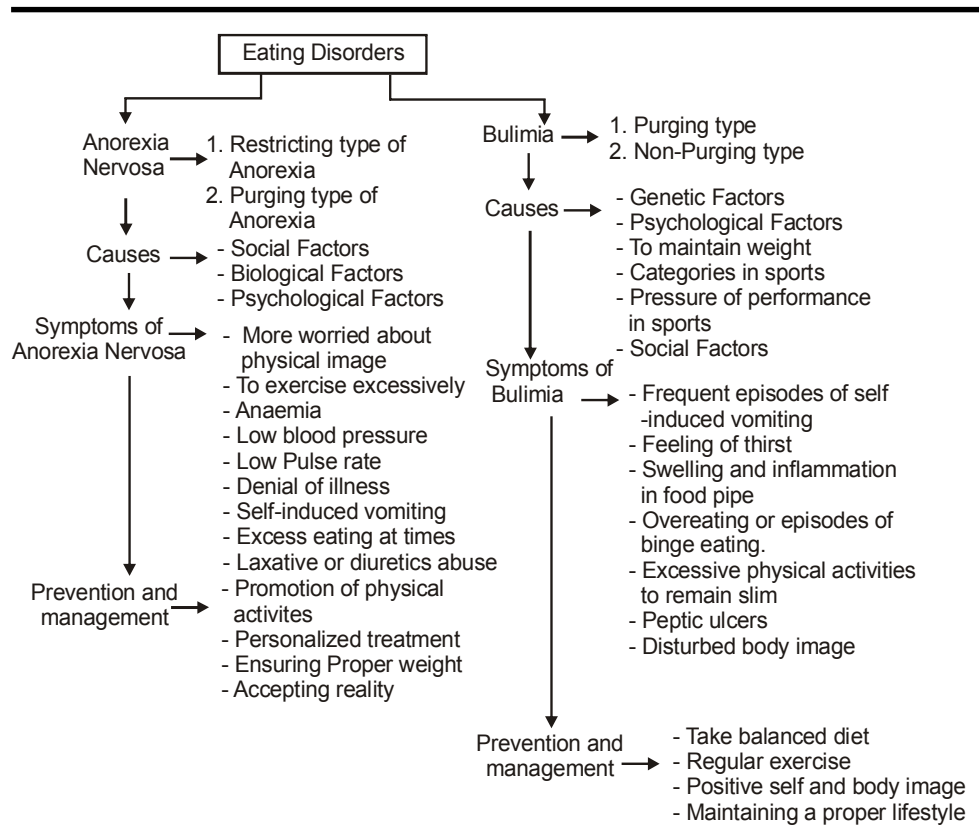
- Explain any three reasons for less participation of women in India?
- Describe the social factors of women participation in sports.
- Suggest techniques to promote participation of women in sports.

5.5



Multiple Choice Question

- Menarche is the
 - Very first menstrual bleeding in girls
 - Last menstrual bleeding in girls.
 - Irregular bleeding in girls.
 - Regular bleeding in girls.
- The average menstrual cycle consists of ____ days.
 - 10–15 days
 - 15–25 days
 - 21–35 days
 - 05-10 days
- Define menstrual Dys function
 - Irregular menstrual bleeding
 - Delay of menstrual cycle



Multiple Choice Question–1 Mark

1. Osteoporosis mean.
 - a. Insufficient calcium in bone []
 - b. Low bone density []
 - c. a & b both

2. Anorexia nervosa is a
 - a. mental disorder illness []
 - b. Wrong perception []
 - c. Normal diet related diseases []
 - d. Serious disease []

-
3. Amenorrhoea is caused by
- a. Hormonal imbalance, irregularity in diet []
 - b. Hormonal imbalance in reproductive system []
 - c. Hormonal imbalance & irregular in menstrual cycle []
 - d. Hormonal balance regular in menstrual period []
4. Bulimia Nervosa is an
- a. Eating disorder []
 - b. Eating disability []
 - c. eating of balanced diet []
 - d. eating of habits []

Short Answer Type Questions

(3 Marks each)

- Q.1 What are the causes and risk factors of osteoporosis?
- Ans. Osteoporosis is a skeletal disorder which refers to the decreased bone material content. There are various factors, which lead to osteoporosis, these are :
- A. **Insufficient calcium in diet** :- The main cause of osteoporosis is intake of insufficient calcium in diet.
 - B. **Amenorrhea** :- Women suffering from Menstrual dysfunction or Amenorrhoea for more than 6 months are likely to face osteoporosis because the secretion of the hormone called Oestrogen is decreased in those women. This hormone is necessary for absorption of calcium in our body.
 - C. **Eating disorder** :- Eating disorder like anorexia and bulimia etc. may also cause osteoporosis because they can be less amount of calcium intake.
 - D. **Bad Eating Habits** :- Intake of Caffeine, Alcohol, tobacco or smoking may lead to osteoporosis. These products have a negative effect on Bone Density.

Q.2. Elaborate the various types of disorders/ problems related to menstrual dysfunction?

Ans.

1. **Absence of menstrual periods** :- This problem may be due to eating disorder, excessive exercise schedule, extreme level of stress and medications etc.
2. **Premenstrual syndrome** :- Many girls may have symptoms such as acne, backaches, Sore breasts, headaches, constipation, depression, irritability and feeling anxious etc. These symptoms may be faced by female before their menstruation.
3. **Abnormal Cramps** :- These cramps are caused by a chemical in the body that makes the muscles in the uterus contract.
4. **Heavy or prolonged period** :- It is common for a girl's menstrual period to be heavier on some days than others.
5. **Irregular menstrual period** :- The regular menstrual cycle for a female is 28 days. However, it may vary from 21 to 35 days.
6. **Delay in the first menstrual period.**

Long Answer Type Question (5 Marks 150–200 Words)

Q.1 What do you mean by female triad? Explain the causes of it?

Ans. Female triad means a syndrome in which osteoporosis, amenorrhoea and eating disorders are present in the female. The triad is a serious disorder or illness with life long health consequences and can be very fatal. In fact it is syndrom of three interrelated conditions.

(A)- Osteoporosis :- It is a skelton disorder which refers as to the decreased bone material contents.

-
- a. Insufficient calcium in diet,
 - b. Amenorrhoea,
 - c. Eating disorder,
 - d. Bed eating habits,

(B) Amenorrhoea:- It is a menstrual disorder or illness in female of 18 years or above either never began menstruating or there is an absence of menstruation for three months and more.

The factors or causes which may inspire or enhance the chances of amenorrhoea,

- A. Hormone changes
- B. Intensive exercises
- C. Intake of less carbohydrates or calories.

(C) Eating disorders: When people began to eat more than normal or very small amounts it is known as eating disorders.

These types are

1. Anorexia Nervosa
2. Bulimia Nervosa

Q. What do mean by Anorexia Nervosa what are its causes, symptoms and preventions.

Ans. **Anorexia Nervosa:** This is a psycho-physical condition. It is characterised by lack of appetite and is associated with the subconscious desire to remain slim. Such a feeling usually develops in young women or adolescent female in order to retain their body figure and image. As a result of this, there is a refusal to maintain normal body weight from their fear of becoming obese and spoiling their figure.

Anorexia is an eating disorder which is affecting the youth nowadays., It is a dangerous disorder for our health and well being.

Anorexia can lead to many problems such as bone loss, loss to skin integrity and many even cause menstruation to stop. It puts great stress on the heart and interreges the risk of heart attacks and other heart related problems. Individual suffering from anorexia also face an increased risk of death.

Causes of Anorexia : Anorexia is an eating disorder that is caused by a combination of several psychological social and biological factors. Several other factors such as family environment, personality traits and low self-esteem may also lead to anorexia. The factors causing anorexia are as follows:

1. **Psychological factors:** Individuals suffering from anorexia are generally perfectionists. Due to their obsession with keeping themselves fit, they are always conscious about their body. For this, they do not even hesitate to use artifactual means. Eating too little, excessive exercise, always being conscious about their body weight and physical appearance become the main causes of anorexia.
2. **Social factors:** Cultural and social constructs about being thin and beautiful put severe pressure on individuals and may cause anorexia. Specific social and cultural ideas relating to health and beauty, promote weight loss and begin thin as the ideal indicators of success and self-worth. Sometimes, parents and relatives may also be critical or their children's physical appearance which may lead to anorexia.
3. **Biological factors:** Biological factors such a circular hormonal functions and nutritional deficients may cause anorexia. Genetics also play a significant role in anorexia as parents suffering from anorexia are more prone to having children who are likely to develop anorexia.

Symptoms of Anorexia

1. **Significant underweight:** The individual having anorexia will not be able to maintain BMI and will lose weight significantly.

-
2. **Anaemia:** Anorexia may be one of the leading causes of anaemia. This leads to tiredness in an individual.
 3. **Low pulse rate:** The individual having anorexia will have low heart rate.
 4. **Low blood pressure:** Anorexia may lead to low blood pressure.
 5. **Decrease in body temperature:** Low body temperature is also one of the symptoms of anorexia. Due to low heart rate and low blood pressure, temperature of body is not maintained properly.
 6. **Failure of menstruations or cessation of the same once established:** Irregular menses or Amenorrhoea may be one symptom of anorexia. Irregularity in mensuration is one of the main causes of anorexia.
 7. **Denial of illness:** An individual suffering from anorexia has the tendency to deny the facts related to the disorder.
 8. **Self-induced vomiting:** An individual suffering from anorexia will go to the wash room frequently and induce vomit, especially after a meal.
 9. **Excess eating at times.** An individual suffering from anorexia will eat excessively and when he is unable to digest the food, they will induce vomit.
 10. **Laxative or derelicta abuse.** An individual suffering from anorexia will use diuretics and drain out fluids from his/her body to remain slim. Individuals also use laxatives or artificial sweeteners.

Prevention and Management of Anorexia

The prevention and management of anorexia are very important in the treatment of this disorder. The basic preventive measures used in anorexia are also follows:

1. People should be encouraged to inculcate a positive self-esteem and body image.
2. Body sizes should not be criticized and students should not be taught to be preoccupied with their weight.

-
3. Students should have knowledge of generic factors that determine body weight. They should be made to understand that being thin is not the most important means to be popular, beautiful or successful.
 4. They should have a healthy approach towards their eating and exercising habits and should avoid the company of those people who are obsessed about their body weight.

Q.3. What is Bulimia? What are its causes symptoms and prevention.

Ans. Bulimia is an affecting adolescence girls or young women it is characterised by period of excessive eating (binge) alternating with normal eating.

Types of Bulimia 1. Purging, 2. Non-purging.

Causes of Bulimia: Bulimia is not the result of a single or definitive cause. There are many factors that are related to bulimia.

1. Genetic factors: Genetic factors play a vital role in the development of bulimia if one or both parents of an individual or siblings has bulimia then he/she is most likely to suffer from this disorder.
2. Psychological Factors: Psychological factors also play an important role in the development of bulimia in individuals. If an individual has a problem of low self esteem and body image,
3. To maintain weight categories in sports: Sportspersons taking part in sports like Judo, wrestling, weight lifting etc. which have different weight categories are more likely to suffer from this eating disorder.
4. Pressure of performance in sports: Sportsmen reduced body weight will enhance their performance in sports and increase their chances of success, thereby making them vomit the food that they eat.
5. Social factors: Social factors such as peer pressure and preconceived notions about body weight and being

thin, play a significant role in causing bulimia the media also encourage the desire to thin among the youth.

Symptoms of Bulimia

- Frequent episodes of self-induced vomiting,
- Feeling of thirst,
- Swelling and inflammation in food pipe,
- Overeating or episodes of binge eating,
- Excessive physical activities to remain slim misuse of medical aids,
- Red coloured eyes due to broken blood vessels caused by vomiting jerks,
- Peptic ulcers,
- Erosion of dental enamel,
- Disturbed body image,

Revelation and management of Bulimia : There is no fixed cure for Bulimia. This disorder may be prevented upto some extent by following.

1. Individuals should take a balanced diet and follow healthy eating habits.
2. A proper regimen of exercise should be followed regularly to maintain a healthy lifestyle.
3. Bulimia can also prevented by having a positive self and body image. Individuals should not be critical of their body shapes and sizes and focus on maintaining proper lifestyle.

Practice Questions (3 Marks)

1. Describe the childhood exercises. 1×3
2. Discuss the adolescence exercises. 1×3
3. Staying health & active is directly proportion to the good

-
- postures comments. $\frac{1}{2} \times 6$
4. Explain the suggestion to promote participation of women in sports of games. $\frac{1}{2} \times 6$
5. How does menstruation affect women? 1×3
6. Express the consequence of irregularity in menstruation.

Long Answer Question–5 Marks (150 to 200 Words)

1. Mention any three problem of female athletes. $\frac{1}{2} + 1\frac{1}{2} + 1\frac{1}{2} + \frac{1}{2}$
2. Comment on the out looks of Indian society towards the participation of women in sports. Give supportive reason on your opinion? 1×5

A Match the following 1×5

- | | |
|--------------------------|---------------------------------|
| 1. Round shoulder's | a. Eating Psycholicial disorder |
| 2. Menarch | b. Three female problems |
| 3. Female athelate triad | c. Loss bone material clemiry |
| 4. Oestoporossis | d. First menstrual Bleeding |
| 5. Anorexia nervosa | e. Posture deformility |

UNIT - 6

**Test & Measurement in
Sprots**

UNIT - 6

Test & Measurement in Sports

Key Points :

- 6.1 Motor fitness test-50 m standing start, 600 m Run/walk, sit & Reach, Partial curl up, Push ups (Boys), modified push ups (Girls), standing Broad Jump, Agility-4 × 10 m shuttle Run
- 6.2. General Motor Fitness-Barrow three item general motor ability (Standing Broad Jump, Zig Zag, Medicine Ball Put - For Boys: 03 Kg & For Girls: 01 Kg)
- 6.3. Measurement of Cardio Vascular Fitness - Harvard Step Test/Rockport Test

Computation of Fitness Index =

$$\frac{\text{Duration of the Exercise in Second} \times 100}{5.5 \times \text{Pulse count between 1 to 1.5 Min after Exercise}}$$

- 6.4. Rikli and Jones - Senior Citizen Fitness test
 1. Chair stand test for lower body strength
 2. Arm curl test for upper body strength
 3. Chair sit & reach test for lower body flexibility.
 4. Back scratch test for upper body flexibility.
 5. Eight foot up & go test for agility.
 6. Six minutes walk test for aerobic endurance.

6.1. Motor fitness test

1. 50 m standing start
2. 600 m Run/walk
3. Sit and Reach test
4. Partial Curl up
5. Push ups (Boys)
6. Modified Push ups (Girls)
7. Standing Broad Sums
8. Agility - 4 × 10 m Shuttle Run

Motor Fitness test

1. 50 m standing start	Measure the acceleration speed of the athlete	speed Measuring tape, stop watch, cone, flat and clear surface
2. 600 m Run/walk	Measure the aerobic fitness of the athlete	Running track, marking coenes, recording sheets, stop watch
3. SIT and Reach	Measure the flexibility of the athlete	Sit and Reach Box, measuring tape
4. Partial Cur/up	Measure the abdominal strength of the athlete	Stop watch, recording sheet, non slipping surface
5. Push up (Boys)	Measure the upper body muscles strength	Stop watch, non slipping surface, recording sheet
6. Modified push up (Girls)	Measure the upper body muscles strength	Stop watch, non slipping surface, recording sheet
7. Standing Broad Jump	Measure the explosive power of legs.	Measuring tape, landing area
8. 4 x 10 m shuttle Run	Measure agility and speed while running between two line	Wooden Blookes, stop watch, cones, non slipping surface

Multiple Choice Questions (1 Marks)

Q.1. Match the following

- | | |
|-------------------------|---------------------------|
| 1. 600 m Run/walk | A Flexibility |
| 2. Sit and Reach | B Upper muscular strength |
| 3. Push ups (Boys) | C Agility |
| 4. 4 × 10 m Shuttle Run | D Aerobic capacity |

A. 1- C, 2 - B, 3 - D, 4 - A

B. 1D, 2A, 3B, 4C

C. 1B, 2C, 3D, 4A

D. 1,B, 2A, 3C, 4D

Q.2. Partial curl up test for

- A. To measure the explosive power of legs
- B. To measure agility and speed.
- C. To measure abdominal strength**
- D. To measure acceleration speed

Q. 3. Athlete speed (Acceleration) is measured

- A. Modified push ups (Girls)
- B. 4 × 10 m shuttle Run
- C. 50 m standing start**
- D. Sit and Reach

Q.4. Modified push ups for

- A. Volleyball player
- B. Boys
- C. Cricket player
- D. **Girls**

Short Question (3 Marks)

Q.1. Briefly describe the process and scoring of the 50 m standing start and 600 m walk/Run

Ans. 50 m standing start.

Procedure: The test involves running a single maximum sprint over 50 meters, with the time recorded, start from a stationary standing position (hands cannot touch the ground) with one foot in front of the other. The front foot must be behind the starting line. Once the subject is ready, the stater give the instructions “set” then “go” participant should be encouraged to not slow down before crossing the finish line.

Scoring: Time take to cover 50 m distance is expressed in seconds.

600 m walk/Run

Procedure: 600 m walk and Run can be organized on track subject runs a distance of 600 m. The subject takes a standing start from the starting line. The subject may walk in between. However, the objective is to cover the distance in the shortest time when he crosses the finish line he is informed of his time.

Q.2. Standing broad Jump tests the strength of which part of the body. Explain the procedure of the test.

Ans. The explosive strength of the legs is tested by standing broad jump.

Procedure: A take off line is marked on the ground. Subject stand just behind the take off line with the feet several inches apart. The subject swings the arms and bends the knees to take a jump in the long jump pit. Three trials are given to the subject. The distance is measured from the take off line to the heel or other part of body that touches the ground nearest to the take off line. All jumps are measured and the best one is recorded.

Q.3. Briefly describe the process and scoring of the 4 × 10 m shuttle Run?

Ans. Shuttle Run

Purpose: To measure speed and agility

Procedure: Two parallel lines are marked 10 mts apart wooden blocks 2 × 4 inches are kept on one side of marked line. The student stands opposite to the line, where wooden block are placed. On start the student runs towards wooden blocks and pick one of them. Then places the block on the line from where he started. The student continues to run and similiary lift other block and place at starting line.

Scoring: The score is each lap time for completes trial. The better of two trials is taken as final score.

Long Question Answer

Q.1. Enlist of motor fitness test and explain the proces of any Two test.

Ans. Motor fitness test

-
1. 50 m standing start
 2. 600 m Run/walk
 3. Sit and Reach test
 4. Partial Curlup
 5. Push ups (Boys)
 6. Modified push ups (Girls)
 7. Standing Broad Jump
 8. Agility - 4 × 10 m shuttle Run

1. Sit and Reach test

Procedure: This test involves sitting on the floor with legs stretched out straight ahead. Shoes should be removed. The soles of the feet are placed flat against the box. Both knees should be locked and pressed flat to the floor. The tester may assist by holding them down with the palms facing downwards, and the hands on top of each other or side by side. The subject reaches forward along the measuring line as far as possible. Ensure that the hands remain at the same level not one reaching further forward than the other. After some practice reaches, the subject reaches same level not one reaching further forward than the other. After some practice reaches, the subject reaches out and holds that position for at one two seconds while the distance is recorded.

Scoring: The score is recorded to the nearest centimeter or half inch as the distance reached by the hand.

2. Partial Cur/up:

Procedure: The starting position is lying on the back with the knees flexed and feet 12 inches from the buttocks. The feet cannot be held or rest against on object. The arms are extended and are rested on the thighs. The head is in a neutral

position. The subject curls up with a slow controlled movement, until the students shoulders come off the mat two inches, then back down again one complete curl up is completed every three seconds and are continued until exhaustion. There is pause in the up or down position, the curl - ups should be continuous with the abdominal muscles engaged through out.

Scoring: Record the total number of curl-ups, only, correctly performed curl ups should be counted.

Practice Question 6:1

Short Answer Question (3 Marks)

- Q.1.** Explain procedure of any two tests in motor fitness test
1½ + 1½
- Q.2.** Which test is used for agility. Explain in detail? 3
- Q.3.** Explain procedure of push - ups (for boys) and modified push ups. (for girls)
1½ + 1½

Long question (5 Marks)

- Q.1.** Explain in detail the procedure of any two test in motor fitness test?
2½ + 2½
- Q.2.** Explain in detail the procedure and scoring of standing broad jump and sit and Reach test.
2½ + 2½

6.2. General motor fitness

The ability to perform body actions or activities by a person is called general motor fitness, In general motor fitness include speed, agility, strength, coordination and reaction time etc.

1. Standing board jump
2. Zig - Zag Run
3. Medicine Ball Throw

Multiple choice Question (1 Marks)

Q.1. Measurement of the field for 2ig - 2ag

- (a) 16 × 18 m (b) **16 × 10 m**
(c) 15 × 10 m (d) 16 × 12

Q.2. Weight of the medicine ball for Boys

- (a) 1Kg (b) 2Kg
(c) **3Kg** (d) 4Kg

Long Question (5 Marks)

Q.1. Explain General Motor Fitness Test.

Ans. **General Motor Fitness Test :**

Barrow's Three-items General Motor Ability Test

Motor abilities play a very vital role in achieving apex position in games and sports. Motor fitness involves speed, agility, power, coordination, strength and so on. These components of fitness are necessary for competing at top levels.

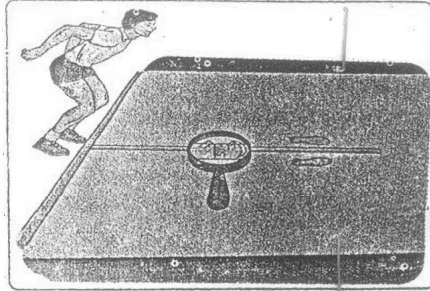
For measuring general motor fitness, the three-item test battery of Barrow is used. In this test, battery of three items such as standing broad jump, zig-zag run and medicine ball put are used to measure the general motor ability of an individual. The details of administration of these tests are described below:

1. Standing Broad Jump (for measuring leg strength)

Equipment and material : A mat of 5 × 12 feet and a measuring tape, if the mat is unmarked.

Procedure : A take-off line is marked on the ground. Subject stands just behind the take-off line with the feet several inches apart. The subject swings the arms and bends the knees to take a jump in the long jump pit. Three trials are given to the subject. The distance is measured from the take-off line to

the heel or other part of body that touches the ground nearest to the take-off line. All jumps are measured and the best one is recorded.

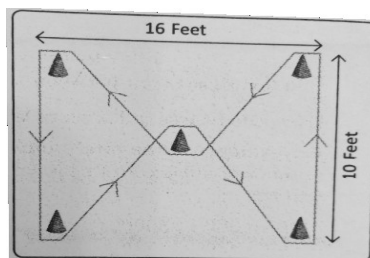


Standing broad jump

2. Zig-Zag Run (for measuring agility and speed)

Equipment and material : Stopwatch, five obstacles and space enough to accommodate the 16 × 10 feet course.

Prodecure : The subject begins from a standing start on the command to run. The subject runs the prescribed pattern stated to him as quickly as he can without gasping. Three complete circuits are run. The stopwatch is started when the command to run is given and stopped immediately when the subject crosses the finish line. The time is recorded to the nearest tenth of a second. Before running the zig and zag run, the subject should warm up properly. The subject should wear proper fitting shoes with good traction to avoid blisters and slipping. Demonstration of the pattern of the course should be given by the administrator before the beginning of the run.



Zig-Zag run

3. Medicine Ball Put (for measuring arm and shoulder strength)

Equipment and material : A medicine ball and measuring taps.

Procedcure : The subject stands between two restraining lines which are 16 feet apart. In case of girls, a medicine ball of 1 kg is provided, whereas in case of boys a medicine ball of 3 kg is provided to be put. After that he/she attempts to put the medicine ball out as far as possible without crossing the restraining line. He/she should hold the medicine ball at the junction of the neck and shoulder then the ball should be put straight down the course. Three trials are given to him/her. The best of three trials is recorded. The distance is computed to the nearest foot. A put in which the subject commits a foul is not scored. However, if all the trials are fouls, subject he/she should try until he/she make a fair put.

Practice Question 6.2

Short Answer question (3 Marks)

- Q.1.** List all three items of barrow test and explain any one. 1 + 2
- Q.2.** What is the weight of medicine ball for boys and girls respectively. Explain the procedure as well. 1 + 2

Long Answer Question (5 Marks)

- Q.1.** What do you understand by general motor fitness test. Explain all its parts in detail. $\frac{1}{2} + 1\frac{1}{2} + 1\frac{1}{2} + 1\frac{1}{2}$

6.3 Measurement of cardio vascular fitness: Harvard step test Rock prot test (one mile)

Cardio-vascular Fitness. Cardio-vascular fitness is the ability of the heart and lungs to supply oxygen-rich blood to the working muscle tissues and the ability of the muscles to use

oxygen to produce energy for movements.

(a) Harvard Step Test. It is a cardiovascular fitness test. It is also called aerobic fitness test. It used to measure the cardiovascular fitness or aerobic fitness by checking the recovery rate.

Fitness Index (F.I) =

$$\frac{\text{Duration of Exercises in Seconds} \times 100}{2 \times \text{sum of three pulse counts after exercise}}$$

(b) Rockport One Mile Test. It is also known as Rockport Fitness Walking Test. Its objective is to check or observe the development of the individual's VO_2 Max i.e., maximum volume of oxygen.

The calculation of VO_2 max = $132.853 - (0.0769 \times \text{body wt.})$
 $- [0.3877 \times \text{Age}] + (6.135 \times \text{Gender})$
 $- 3.2649 \times \text{Time}] - (0.1565 \times \text{Heart Rate})$

-Body wt. in pounds

-Gender -male -1, Female 0

-Time in minutes & 100th of a minutes.

-Heart Rate in beats/minute.

-Age is in year.

Computating of fitness Index

1. Fitness index score (long term)

$$= \frac{100 \times \text{test duration in sec.}}{2 \times \text{sum of heart beats in recovery period (three)}}$$

Fitness Index score (short term)

$$= \frac{100 \times \text{test duration in sec.}}{5.5 \times \text{pulse count between 1 to 1.5 minutes after exercise}}$$

Short Answer Questions (3 words)

Q.1 Explain the Rock port one mile test's Administration.

Ans. It is also known as Rock port fitness walking test. Its objective is to check or observe the development of the individual VO₂ max, (maximum volume of oxygen.)

Administration of Rockport Fitness Walking Test :

The Athlete is asked to start the mile long walk and complete it as quickly as possible. The Athlete has to bear in mind that She/he does not start running or jogging in an effort to complete the test. Once the athlete has completed walking the mile, the time taken to do so is recorded in minutes and hundreds of seconds and the heart rate is recorded as beats per minute. After the time and heart rate are recorded, the following variables are also recorded:

Q.2. What do you understand by cardiovascular fitness! To calculate the fitness index of an individual.

Ans. Cardiovascular fitness is the ability of the heart and lungs to supply oxygen rich blood to the working muscle tissues and the ability of the muscles to use oxygen to produce energy for movement

$$\text{Fitness index} = \frac{\text{Duration of activities (in seconds)} \times 100}{2 \times \text{sum of three pulse count after rest}}$$

OR

$$\frac{\text{Duration of activities (in seconds)} \times 100}{5.5 \text{ pulse counts (any ans)}}$$

Q.3. Explain harvard Step Test in details.

Ans. **Harvard Step Test** : The harvard step test is a test of aerobic fitness, developed by Brouha et al. (1943).

Objective : The objective of this test to monitor the development of the athlete's cardiovascular system.

Required Resources :-

- Gym bench (45 cm high)
- Stopwatch
- Assistant



How to Conduct the test

This test requires the athlete to step up and down off a 45 cm high gym bench for 5 minutes at a rate 30 steps/minute.

- The athlete warm up for 10 minutes
- The assistant gives the command “Go” and starts the stopwatch.
- The athlete steps up-up and down-down onto a standard gym bench once every two seconds for five minutes (150 steps)
- The assistant stops the test after 5 minutes.
- The assistant measures the athlete's heart beat rate (bpm) one minute after finishing the test pulse 1
- The assistant measures the athlete's rate (bpm) two minutes after finishing the test - Pulse-2
- The assitant measure the althlete's heart rate (bpm) three minutes after finishign the test pulse 3.

Fitness Index physical efficiency Index

$$= \frac{\text{Duration of examises (In sec)} \times 100}{2 \times \text{sum of heart beat after rest. (three counts)}}$$

Short method physical fitness Index

$$= \frac{\text{Duration of examises (In sec)} \times 100}{5.5 \times \text{pulse cont of 1-1.5 min after exemises (one count)}}$$

Practice Question 6.3

Short question (3 Marks)

- Q.1.** What do you under stand by Rock port one mile test? Explain its Procedure. 1 + 2
- Q.2.** Explain computations of fitness index long an short methods. 1½ + 1½

Long question (5 Marks)

- Q.1.** What do you understand by cardio-vascular fitness? Explain Harvard step test in detail 2 + 3
- Q.2.** Explain the procedure, advantages and disadvantages of Rock port one mile test.

7.7 Rikli and jone's-senior citizen Test.

Rikli and Jones developed the senior citizen fitness test in 2001. This test has proved to be beneficial for senior citizens.

Test Items and objectives.Parts of Body-Physical

Parts of Body	Fitness Components
1. Chair stand. Test for lower body strength.	1. Lower body strength, leg strength & Endurance
2. Arm curl test for upper body flexibility	2. The upper body strength, arm flexor, strenght & endurance

-
- | | |
|--|--|
| 3. Chair sit & reach test for lower body flexibility | 3. The hamstring and lower back flexibility |
| 4. Back-scratch test for upper body flexibility | 4. The upper body flexibility of the body & range of motion of the shoulders |
| 5. Eight foot up & Go test for agility | 5. The motor agility, speed & balance |
| 6. Six minute walk test for aerobic endurance | 6. Cardio-vascular endurance & recovery |

Multiple Choice Question (1 Marks)

Q.1. Match the following

- | | |
|-----------------------------|------------------------------|
| 1. Arm curl test | A. lower back flexibility |
| 2. Back scratch test | B. upper body strength |
| 3. Six minute walk test | C. cardio-vascular endurance |
| 4. Chair sit and Reach test | D. upper body flexibility |
- A. **1B, 2D, 3C, 4A** B. 1C, 2B, 3D, 4A
C. 1C, 2B, 3A, 4D D. 1D, 2C, 3B, 4A

Q.2. Rikli and Jones senior citizen test was developed in

- | | |
|-----------------|----------|
| (a) 1990 | (b) 2000 |
| (c) 2001 | (d) 2002 |

Q.3. Which of the following is assessed by eight foot up and go test.

- (a) Physiology fitness
(b) **Walking speed, Coordination and agility**
(c) Lower body flexibility
(d) Upper body strength

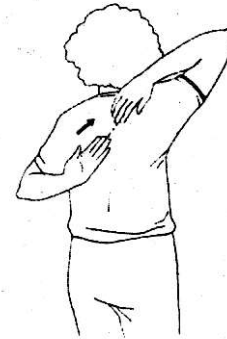
Short Question Answer (3 Marks)

Q.1. Discuss the Back Scratch test for upper body flexibility.

Ans. **Back Scratch Test : Purpose :-** To assess the upper body (shoulder) flexibility, which is important in performing various jobs such as combing one's hair, putting on overhead garments and reaching for a seat belt etc.

Equipment Required:- A ruler.

Procedure:- This test is performed in standing position. Keep one hand behind the head and back over the shoulder and reach as far as possible down middle of the back. Palms should touch to body and the fingers should be downwards. Then carry other arm behind back palm facing outward and fingers upward and reach up as far as possible trying to touch or overlap the middle fingers of both hands. Fingers should be aligned. Measure the distance between the tips of the fingers. If the finger tips touch then the score is zero. If they do not touch measure the distance between the fingertips (-ve score). If they overlap measure by how much (+ive score). Practise two times and then test



Q.2. Explain the chair stand test for lower body strength.

Ans. **Chair Stand Test : Purpose.** The main purpose of this test is to measure the lower body strength, particularly legs strength which is usually required for various tasks such as climbing stairs, getting in and out of vehicle, bathtub or chair.

Equipments Required : A chair with a straight back and a seat of at least 44 cm and a stopwatch.

Instructions for Participants:-

1. The participant should sit in the middle of the chair.

2. She/He should keep his hands on the opposite shoulder crossed at the wrists.
3. The feet should be flat on the floor.
4. Her/His back should be erect.
5. Repeat sit up and down for 30 seconds.

Procedure : Keep the chair against the wall. The participant sits in the middle of the seat. His/her feet should be shoulder width apart and flat on the floor. The arms should be crossed at the wrists and held close to the chest. From the sitting position, the participant stands up completely then back down at the start of the signal. This is repeated for 30 seconds. Count the total number of complete chair stands. In case the participant has completed a full stand from the sitting position when the time is finished the final stand is counted in the total.

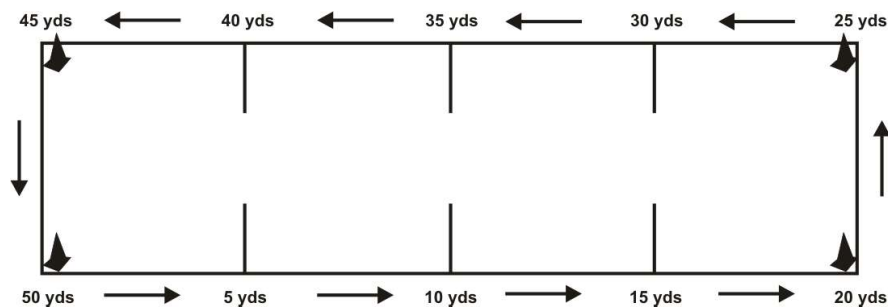
Q.3. Write the test to measure the aerobic fitness of senior citizen.

Ans. Rikli & Jone's Test- Senior citizen's test.

6 Minutes Walk Test is used for aerobic fitness.

Purpose : This test measures aerobic fitness of senior citizens.

Equipment required : Measuring tap to mark out the track distances, stopwatch, chairs positioned for resting.



Procedure :

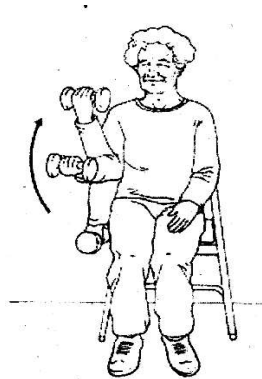
- The walking course is laid out in a 50 yard (45.72m) rectangular area (dimensions 45 × 5 yards), with cones placed at regular intervals to indicate distance walked.
- The aim of this test is to walk as quickly as possible for six minutes to cover as much distance as possible.
- Subjects are set their own pace (a preliminary trials is useful to practice pacing), and are able to stop for a rest if they desire.

Q.4. Discuss the test item of Rikli & Jone's to measure the upper body strength.

Ans. **Arm Curl test of Rikli & Jone's** used to Testing upper body strength of senior citizen

Equipment : 5 lb Weight and 8 lb weight, stopwatch, a straight-back chair with no arms.

Women will curl a 5 lb. weight in this test and men will curl a 8 lb. Weight for their test. It is extremely important to the accuracy of the test that we use the appropriate weight for men and women in this test.



Procedure :

- Test assistant will tell to begin and will time for 30 seconds, using the stopwatch or a watch with a second hand.

-
- Do as many curls as can in the allotted 30-second time period, moving in a controlled manner.
 - Do a full curl, squeezing lower arm against upper arm at the top of each curl and returning to a straight arm each time. Keep upper arm still.
 - Do not swing the weight.
 - If started raising the weight again and are over half way up when time is over, count that curl.

Scoring : The score is the total number of controlled arm curls performed in 30 seconds.

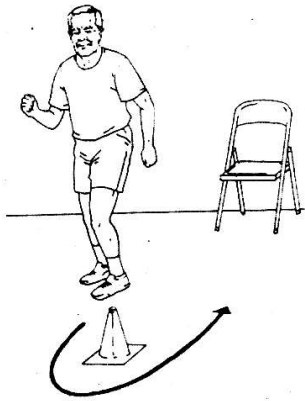
Q.5. Which test is used to measure the co-ordination and agility of senior citizen? Write in detail.

Ans. **Eight Foot up and Go Test: Reikli & Jone's Senior Citizen Test :** This test is a co-ordination and agility test for senior citizens.

Purpose : To assess speed, agility and balance while moving. These are important in performing various jobs which require quick manoeuvring, such as getting of a bus in time and to answer the phone etc.

Equipments Required : A chair with straight back (about 44 cm high) a stopwatch, cone marker, measuring tape and an area without any hindrances.

Procedure : Keep a chair next to the wall and the marked, 8 feet in front of the chair. The participant starts completely seated, hands resting on the knees and feet flat on the ground. On the command 'Go' stopwatch is started and the participant stands and walks (no running at all) as quickly as possible to and around cone and returns to the chair to sit down. Time is noted as She/he sits down on the chair. Two trials are given to the participant.



Eight Foot Up and Go Test

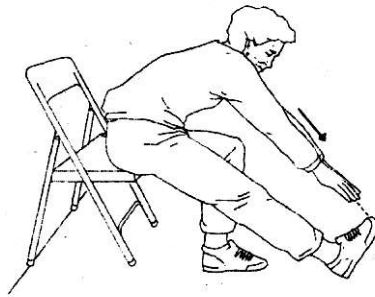
Q.6. Discuss chair sit and reach test in briefly.

Ans. **Chair sit and reach test**

Daily Benefit : Lower body flexibility is important for preventing lower back pain. It also plays a role in balance, posture, in fall prevention, or walking. Lower body flexibility is important for maintaining an active, independent lifestyle.

Purpose : This test measures lower body flexibility.

Equipment required : Ruler, straight back or folding chair, (about 17 inches/ 44 cm high)



Procedure :

- The subject sit on the edge a chair (placed against a wall for safety).

-
- One foot must remain flat on the floor. The other leg is extended forward with the knee straight, heel on the floor, and ankle bent at 90°.
 - Place one hand on top of the other with tips of the middle fingers even. Instruct the subject to inhale, and then as they exhale, reach forward toward the toes by bending at the hip.
 - Keep the back straight and head up. Avoid bouncing or quick movements, and never stretch to the point of pain. Keep the knee straight, and hold the reach for two seconds.
 - The distance is measured between the tip of the fingertips and the toes.
 - If the fingertips touch the toes then the score is zero. If they do not touch, measure the distance between the fingers and the toes (a negative score). If they overlap, measure by how much (a positive score).
 - Perform two trials

Practice question 6.4

Short Question (3 Marks)

- Q.1.** Explain the procedure of test used to measure aerobic endurance of senior citizen. 3
- Q.2.** Explain Rikli and Jones test for upper body strength. 3
- Q.3.** Your grandfather thinks the flexibility of his body has decreased. What test would you suggest him explain. 3

Long question (5 Marks)

- Q.1.** What is the fitness test for senior citizens and why is it necessary? 2½ + 2½
- Q.2.** Explain Rikli and Jones test in detail? 5

Practice Question Chapter-6

- Q.1.** Explain the test used to measure oxygen content in blood during exercise? 3
- Q.2.** Differentiate between motor fitness test and general motor fitness test? $1\frac{1}{2} + 1\frac{1}{2}$
- Q.3.** Compare and state the similarities and differences between Harvard step test and Rock port one mile test? $1\frac{1}{2} + 1\frac{1}{2}$
- Q.4.** Name and explain the procedure of the test used to measure the strength of legs. $\frac{1}{2} + 2\frac{1}{2}$
- Q.5.** Explain in detail chair sit and Reach test and sit and Reach test? $2\frac{1}{2} + 2\frac{1}{2}$

Q. Match the following (1 Marks)

- | | |
|-------------------------|---------------------------------|
| 1. 600 m Ran/walk | A. General motor fitness test |
| 2. Zig - Zag Run | B. Rikli and jones test |
| 3. Harvard step test | C. Motor fitness test |
| 4. Six minute walk test | D. Cardio vascular fitness test |
| (a) 1D, 2C, 3B, 1A | (b) 1C, 2A, 3D, 4B |
| (c) 1A, 2D, 3D, 4C | (d) 1D, 2B, 3A, 4C |

Q.2.

- | | |
|---------------------------------|--------------------------------|
| 1. motor fitness test | A Chair stand test |
| 2. Rikli and jones test | B Computation of fitness index |
| 3. General motor fitness test | C Standing Broad jump |
| 4. Cardio vascular fitness test | D 4 × 10 m Shuttle Run |
| A. 1C, 2B, 3A, 4D | B. 1B, 2A, 3D, 4C |
| C. 1D, 2A, 3C, 4B | D. 1B, 2A, 3D, 4C |

UNIT - 7

**Physiology and
Injuries in Sports**

UNIT - 7

Physiology and Injuries in Sports

Key Points :-

- 7.1. Physiological factors determining components of physical fitness.
- 7.2. Effect of exercise on cardio Respiratory system.
- 7.3. Effect of exercises on muscular system.
- 7.4. Physiological changes due to ageing
- 7.5. Sports injuries: Classification (Soft tissue injuries Abrasion, Contusion, Laceration, Incision, sprain & stain) Bone & Joint Injuries (Dislocation, fractures, stress fracture, Green Stick, Communated, Transverse oblique & Impacted) Causes, Prevention & Treatment.
- 7.6. First Aid - Aims & objectives.

7.1

Physiological factors determining components of physical fitness

Strength

- Size of muscle
- Morphology of the muscle
- Body weight
- Intensity of Nerve impulse
- Coordination of muscle that Participate in movement
- Hypertrophy of muscle

Speed

- Explosive power
- Muscle composition
- Elasticity and Relaxing capacity of muscle
- Mobility of Nervous system
- Bio-chemical reserves and metabolic power
- Flexibility

Endurance

- Aerobic capacity
- Anaerobic capacity
- Movement economy
- Muscle composition

Speed

- Anatomical structure of joint
- Age and sex
- Muscle strength
- Stretchability of muscles
- State an organism
- Injuries
- Stretching Muscles
- Environment
- Active and motionless life style

Multiple choice Question (1Marks)

Q.1. How many physiological factors determined. Physical fitness?

- (a) Two (b) **Four**
(c) Five (d) Three

Q.2. Flexibility is not determined by which physiological factors?

- (a) Muscle strength (b) Age, gender
(c) Injury (d) **Aerobic capacity**

Q.3. Endurance is determined by which physiological factor?

- (a) **Aerobic capacity** (b) Flexibility
(c) Age, gender (d) Enjuries.

Q.4. Strength is determined by which physiological factor?

- (a) **Body weight** (b) Muscle coordinatiore
(c) Joints (d) Muscle stretching

Q.5. Match the following

- | | |
|--------------------------|----------------------|
| 1. Speed | A. Age/gender |
| 2. Strength | B. Aerobic capacity |
| 3. Endurance | C Muscle size |
| 4. Flexibility | D Explosive strength |
| A. 1D, 2C, 3B, 4A | B. 1C, 2B, 3A, 4D |
| C. 1B, 2D, 3A, 4C | D. 1A, 2B, 3D, 4C |

Short Question (3 Marks)

Q.1 Discuss the physiological factors, determine the strength as a component of physical fitness?

-
- Ans. **1. Muscle size:** Bigger and larger muscles can produce more force. Males have larger muscles than females so the size muscles and strong can be improved with the help of weight training.
- 2. Body weight:** The individuals who are heavier are stronger than the individuals who are lighter for example the heavier weight lifters than the Gymnastic or other games players.
- 3. Muscle composition:** The muscles which have more percentage of fast twitch fibers can produce more strength while the slow twitch fibers are not capable to contract faster but they are capable to contract for a longer duration. The percentage of fast twitch fibers and slow twitch fibers is genetically determined and can not be changed through training.
- 4. Intensity of the nerve impulse:** When a stronger nerve impulse from central nervous system excite more number of motor units, the muscles will contract more strongly or it can side that the muscle will produce more force or strength.

Q.2. Discuss the physiological factors, determine the endurance as a component of physical fitness: (Any three)

Ans. Aerobic capacity:

- * oxygen intake
- * oxygen uptake
- * oxygen transport
- * Energy Reserve

Anaerobic capacity :

- Storage in body of ATP and CP (phosphogen stock)
- Buffer capacity - in muscles lactic acid accumulation ineffective
- Endurance of lactic acid

-
- VO_2 max. This is the quantity of oxygen, which active muscles use during exercise in one minute.

Long Answer Type Question (5 Marks)

Q.1 Discuss how physiological factors determine flexibility? 1 × 5

- Ans.
- 1. Muscle strength :-** The muscle should have minimum level of strength to make the movement, specially against the gravity or external force.
 - 2. Joint structure :-** There are different types of joint in human body, some of the joints intrinsically have greater range of motion than others. For example. The ball and socket joint of the shoulder has the greatest range of motion in comparison to the knee joint.
 - 3. Internal environment :-** Internal environment of athlete influences the flexibility. For example-warm bath increases body temperature and flexibility whereas 10 minutes outside stay in 10°C temperature reduces the body temperature and flexibility.
 - 4. Injury :-** Injuries to connecting tissues and muscles can lead to thickening or fibrosis on the effected area. Fibrous tissues are less elastic and can lead to limb shortening and lead to reduce flexibility.
 - 5. Age and gender :-** Flexibility decreases with the advancement of age. However it is trainable. It can be enhanced with the help of training, as strength and endurance are enhanced. Gender also determine the flexibility. Females tend to be more flexible than male.
 - 6. Active and sedentary life style :-** Regular activities enhance the flexibility, whereas inactive individual loses flexibility due to the soft tissues and joints shrinking and losing extensibility.

-
7. **Heredity** :- Bony structures of joints length and flexibilities of the joint capsules and surrounding ligaments are genetical and can be altered by stretching programs.

(Explain any 5 points)

Q.2. Describe the physiological factor determine the speed? 1×5

- Ans. 1. **Explosive strength**- For every quick and explosive movement, explosive strength is indispensable. Like, a quick punch in boxing can not be delivered if the boxer lacks explosive strength. Explosive strength further depends on muscle composition, muscle size, and muscle coordination.
2. **Muscle composition**- The muscle which have more fast twist fibers. They can do more speed. The muscle composition is genetically determined. We will improve it only by some training methods.
3. **Mobility of nervous system**- Motor and sensory neurons of nervous system can be determined by the mobility of nervous system. By training only we can limited extent in the mobility of nervous system because speed is determined to a great extent by genetic factors.
4. **Elasticity and Relaxing capacity of muscle**- Through the elasticity of muscle, muscle can move to a maximum range which reduces the inner hurdles and is instrumental in speeding up the activity. The muscles which get relaxed soon, they contract easily.
5. **Bio-chemical Reserves and Metabolic Power**- For doing the exercises which are done quickly muscles need more energy. This energy in our muscles is obtained through the presence of phosphosene (ATP) and creating phosphate (CP). The percentage of power and quantity in ATP and CP can be increased through training.

Practice question 7.1

Short Answer Question (3 Marks)

Q.1. List down the physiological factors that affect endurance and explain any two? 1 + 2

Q.2. Explain the physiological factors affecting flexibility? 1 × 3

Long answer question (5 Marks)

Q.1. What are the component of physical fitness explain one in detail? 1 + 4

Q.2. What factors influence the speed of a person, Discuss?1×5

7.2. Effect of exercise on cardio Respiratory system.

- Decrease in basic heart rate
- Increase the efficiency of heart rate
- Increase the heart size and weight
- Increase cardiac output and stroke volume
- Increase number of capillaries
- Decrease cholesterol level
- Fast recovery period
- Delay fatigue
- Increase blood flow in the body
- Increase blood pressure
- Increase stroke volume
- Strong will power
- Increase Tidal capacity
- Decrease in Rate of Respiration

-
- Strengthens Diaphragm and muscles
 - Delay in second wind
 - Prevention form Diseases
 - Increase in Endurance
 - Passive Alveoles become Active
 - Increase in size of lungs and chest
 - Increase in vital air capacity.

Multiple Choice Question (1 Marks)

Q.3. Cardiac output is

- A. **Blood pumped by heart per minute**
- B. Blood pumped per heart bead
- C. Blood pumped per minute during intense exercise
- D. Blood pumped per hour.

Q.4. Taking is oxygen from the atmosphere into the body in know as?

- (a) Exhalation
- (b) **Inhalation**
- (c) Stroke value
- (d) Aerobic capacity

Q.5. Intake of oxygen and given out carbon dioxide through alveoli is called?

- (a) Circulation
- (b) Vital capacity
- (c) **Respiration**
- (d) Aerobic capacity

Long Question Answer (5 Marks)

Q.1. Explain the five effect of exercise on the cordiorespiratory system.

Ans. **Increase in heart rate** :- When an individual starts exercise, his heart rate increases as per the intensity and duration of exercise.

Increase in stroke volume :- Stroke volume increases proportionally with exercise intensity. It is measured in ml/beat.

Increase in cardiac output :- Cardiac output increases proportionally with the intensity of exercise's is measured in ltr/minute.

Increases in blood flow :- Cardio-vascular can be distribute more blood to those tissues which have more demand and less blood & those tissues which have less demand for oxygen.

Increase in blood pressure :- During the exercise, systolic blood pressure can increase while diastolic blood pressure usually remains unchanged even during the intensive exercise.

Increase in vital air capacity- It is the amount of air which an individual can inhale and exhale with maximum effect. its capacity varies from 3500 cc. Due to exercise its capacity increases upto 5500 cc.

Increase in Residual air volume- Due to regular exercise increases the capacity of residual volume from normal capacity.

Passive Alveolus become Active- Regular exercise activates the unused alveoles because much amount of O_2 is required in prolonged exercise of daily routine.

Minute volume decrease- Decrease the volume of oxygen in per minute.

Second wind almost finished- Due to regular exercise need of second wind is almost finished.

Increase Endurance- If exercise is performed regularly and for a longer period, it increases endurance. An activity can be done for a longer period without taking any rest.

(Explain any five.)

Practice question 7.2

Short Answer Question (3 Marks)

Q.1. State any 3 effects of exercise on the respiratory system?
1 × 3

Q.2. State any 3 effects of exercises on the cardiovascular system?
1 × 3

Long answer question (5 Marks)

Q.1. List down the effects of exercise on cardiovascular system and explain any four?
1 + 4

7.3 Effects of exercise on muscular system.

“Muscle is a specialized tissue, which enables the body and its part to move and give shape to the body”

Effects of Exercise

- Change in shape and size of muscle
- Muscle hypertrophy
- More energy supply to muscle
- Improve in reaction time
- Capillarization

-
- Reduction fat
 - Muscular endurance
 - Posture
 - Controls extra fat
 - Delays fatigue
 - Increase food storage
 - Strength and speed

Multiple choice question (1 Marks)

Q.1. Which of the following is a function of muscles?

- (a) Oxygen intake (b) Oxygen Transport
(c) **Structure and support** (d) Blood flow

Q.2. Exercise not leads to

- (a) Increase in size of muscles
(b) Better reaction time
(c) Increased muscle speed
(d) **Minute volume Decreases**

Q.3. Muscles consist of

- (a) Voluntary muscles (b) Involuntary muscles
(c) Cardiac muscles (d) **Red fibres**

Short Question (3 marks)

Q.4. Differentiate between slow twitch fibre and fast twitch fibre.

Ans. Slow twitch fibre Fast twitch fibre
(red fibres) (white fibres)

-
- | | |
|--|---|
| 1. The red fibres of muscles are mainly responsible for the endurance activities. | The white fibres of muscle are responsible of strength and speed activities. |
| 2. The red fibres are produced energy by the nutrients in the presence of oxygen only. | The white fibre are produced energy by the nutrients with out the presence of oxygen. |

Long Answer Question (5 Marks)

Q.1. List the effects of exercise on muscular system and explain four in detail? 1 + 4

Ans.

1. Increase in shape of muscles
2. Formation of new capillaries
3. Muscles Remain in tone Position
4. Increase in Activeness of fibres
5. Correct body posture
6. Improves Reaction time
7. Reduction in extra fat
8. Increase in strength of connective tissues
9. Efficiency in muscle movements
10. Delay fatigue
11. Enhances body figure
12. Exercise prevents diseases

effects of exercise in muscular system.

1. **Muscle Hypertrophy-** Due to regular exercise a good growth in size of muscles.
2. **Capillaristion-** Increase the number of capillaries due to regular exercise and the colour will be dark red.
3. **Control Extra fat-** Regular exercise controls the extra fat of body. Exercises burn the entra calories.
4. **Delay fatigue-** Regular exercise delay fatigue. This fatigue is mainly due to formation of carbon dioxide, lactic acid and acid phasphate.
5. **Posture-** Regular exercise helps in improving posture by improving postural defomities.
6. **Strength and speed-** Regular exercise improve the stength and speed muscle cells.
7. **Increases food storage-** The food storage capacity is increased when regular exercise are done. This storage of food can be utilised immediately when it is needed.

(Explain Any four)

Practice question 7.3

Short Question (3 Marks)

Q.1. Three effects if exercise on muscular system? Describe 1×3

Long question

Q.1. Explain in detail the effects of exercise on muscular system?

1×5

7.4. Physiological Changes due to ageing

“Ageing is a gradual and continuous irreversible process that

results in structural and functional alternation”

Decrease Bone density.

Change in the capacity of Respiratory system.

Change in nervous system.

Decrease in Metabolism rate.

Decrease the capacity of Cardio - vascular system.

low capacity of digestive system.

loss in senses.

Flexibility decrease.

Physical activities slows down

Multiple choice question (1 Marks)

Q.1. Which of the following are not signs of again

- (a) Decrease in Bone Density
- (b) Decrease flexibility
- (c) Decrease in muscle size and strength
- (d) **Increase in flexibility**

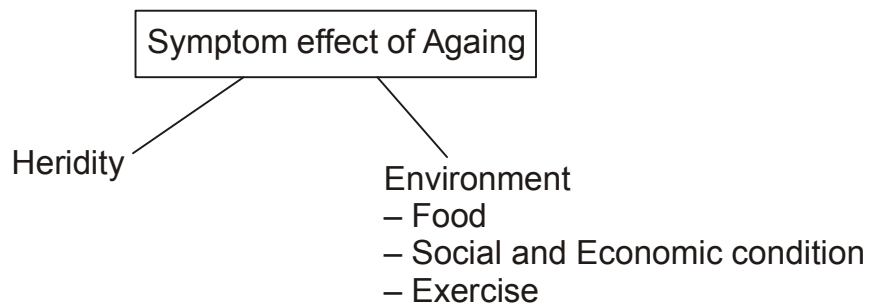
Q.2 Match the following

- | | |
|---------------------------------------|--------------------------------|
| 1. Change in Nervous system | A. Calcium deficiency |
| 2. Change in cardio - vascular system | B. Slow reaction time |
| 3. Loss in sensors | C. Reduction in cardiac output |
| 4. Change in Bone Density | D. Loss of Hearing |
-
- | | |
|--------------------------|-------------------|
| A. 1B, 2C, 3D, 4A | C. 1A, 2C, 3B, 4D |
| B. 1D, 2A, 3B, 4C | D. 1C, 2D, 3A, 4B |

Long question (5 Marks)

Q.1. Elucidate Physiological change due to Ageing?

Ans. Ageing in its broadest sense is the continuous and irreversible decline in the efficiency of various physiological functions. These changes are noticeable usually after 30's.



Physiological changes due to Ageing-

- 1. Muscular system-** Decrease the muscle Mass strength
- 2. Change in nervous system**
 - Loss of sense like Ear, Nose, smell power
 - Capacity of doing work by (CNS) center nervous system also reduced to receive & transmit information.
- 3. Digestive system-** Decrease in metabolism of body composition
 - Reduction in HCL acid, saliva, digestive enzymes and size of salivary glands.
- 4. Skeleton system-** Decrease bone density
 - Less bone density can result in osteoporosis which may lead to fracture
 - Collagen vascular disease
- 5. Change in cardio-vascular system-**
 - Weakness in cardio-vascular muscles

-
- Reduction in stroke volume, cardiac-output, and blood volume
 - Blood vessels also lose their elasticity
 - Feeling of fatigue

6. Change in respiratory system-

- Decrease in work efficiency of lungs in advancing age
- The airways and lung tissues become less elastic
- Decrease oxygen uptake, oxygen exchange
- Muscles of ribcage become weak

7. Decrease physical fitness component Like :-
Strength, speed, flexibility, endurance co-ordination and activeness.

8. Change in Urinary system-

- Mass of the kidneys decreases for that reduction in the rate of blood filtration.
- Increase in residual urine.

Practice question

Short Question (3 Marks)

- Q.1.** Describe any three physiological change due to ageing?
- Q.2.** Explain physiological changes in digestive, respiratory and nervous system due to ageing?
- Q.3.** Explain physiological changes in muscular, circulatory and skeletal system due to ageing?

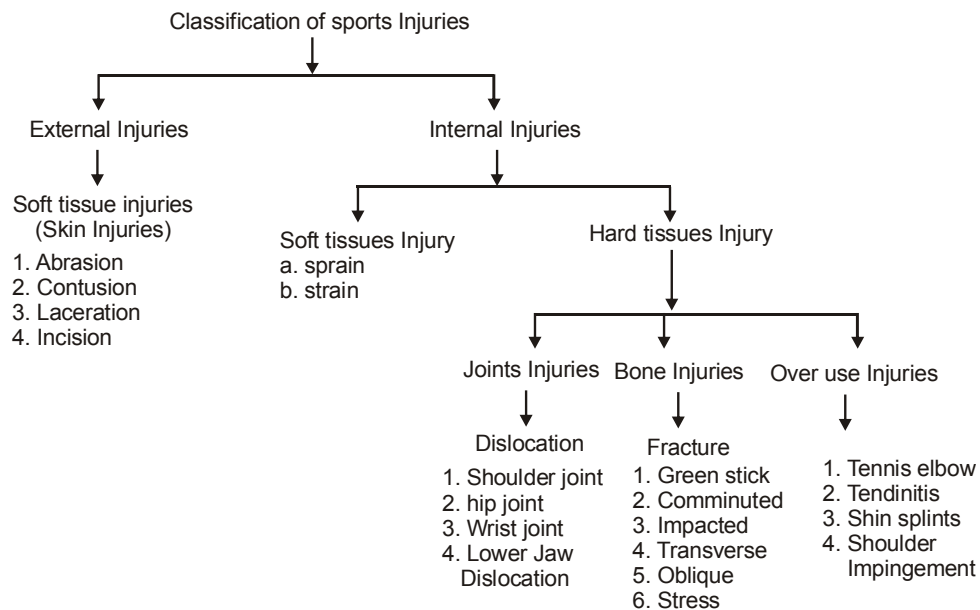
7.5 Sports Injuries:

Classification, causes & prevention sports injuries are “those injuries which usually occur to be the sports persons during training or sports competitions.”

Sports injuries are the stage/ situation of a sports person in

which he/she is not able to participate in the physical/ sports events with same speed or strength. So time she/he should not able to preform in the event.

Classification of sports Injuries



Causes of sports Injuries :

Intrinsic Risk Factor	Extrinsic Risk Factors	
<ul style="list-style-type: none"> – Physical preparation – Lack of proper training fitness level Inproper warming up & cooling down –Over use of muscles –Muscles imbalance –Individual variables:- <ul style="list-style-type: none"> a. Gender & age b. Nutrition c. Fatigue d. Posture deformities 	<ul style="list-style-type: none"> – Coaching <ul style="list-style-type: none"> a. Poor techniques b. Lack of knowledge –skill – Rules & regulations –Surrounding –Environment –Equipments and facilities 	Environmental Factor <ul style="list-style-type: none"> a. Climate b. Playing surfaces c. Preventive Measures d. Medical facilities

Prevention from Sports Injuries :

1. Warming up, stretching and cooling down.
2. Undertaking training prior to competition to ensure readiness to play.
3. Including appropriate speed work in training programme so muscles are capable of sustaining high acceleration forces.
4. Including appropriate stretching and strengthening exercises in weekly training programs.
5. Gradually increasing the intensity and duration of training.
6. Maintaining high levels of cardiovascular fitness and muscle endurance to prevent fatigue.
7. Allowing adequate recovery time between workouts or training sessions.
8. Wearing protective equipments, such as shin guards. Mouth guards and helmets.
9. Pre participation-medical check up.
10. Ensuring the playing surface and the sporting environment are safe and clear from any potentially dangerous objects.
11. Wearing appropriate footwear that is well fitted and provides adequate support and contraction for the playing surface.
12. Drinking water before, during and after play.
13. Avoiding activities that cause pain.
14. Avoid De-hydration & over training.
15. adequate & effectively maintained facilities.
16. Psychological & environmental condition of players.
17. Balanced diet.

Management of Injuries

Soft tissues injuries

1. Price Treatment

- P-Protect the wound
- R-Rest-No more movement
- I-Ice-To stop the bleeding
- C-Compression - To stop bleeding
- E-Elevation - Heart level

2. MICE Treatment

- M – Mobilization
- I – ICE
- C – Compression
- E – Elevation

3. REST Therapy

- R – Rest
- E – Elevate
- S – Support
- T – Tight

Management of joint Injuries

- (i) Rest Therapy
- (ii) Price Therapy

Management of Bone Injuries:

- (i) Price Therapy

Rehabilitation

- (i) Normal Movement
- (a) Treatment
- (b) Physiotherapy
- (c) Massage

-
- (ii) Training and Practice
 - (a) strength
 - (b) endurance
 - (c) flexibility
 - (d) speed
 - (e) coordination & Agility
 - (iii) Specific fitness
 - (iv) Test and measurement

Multiple choice question (1 Marks)

Q.1. Matching the following

- | | |
|--------------------------|-----------------------------|
| 1. Abrasion | A. Joint Injuries |
| 2. Green stick fractures | B. Soft tissue injuries |
| 3. Shoulder Dislocation | C. Cause of sports injuries |
| 4. Lack of fitness | D. Bone injuries |
- (a) 1D, 2A, 3C, 4B (b) 1B, 2A, 3C, 4D
(c) **1B, 2D, 3A, 4C** (d) 1A, 2D, 3B, 4C

Q.2. Not a Causes of sports infuries

- (a) Inadecuate warming up
- (b) Lack of sports Facilites
- (c) Practice During Fatigue
- (d) **Proper knowledge of spots skills.**

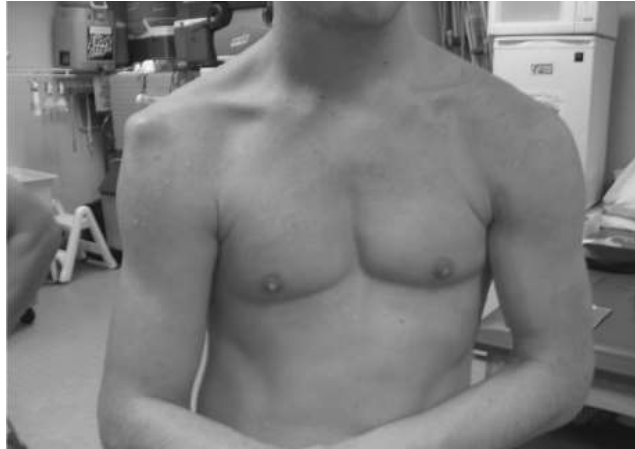
Q.3. You should use Ice on a soft tissue injury after.

- (a) **5 minutes**
- (b) 10 minutes
- (c) 20 minutes
- (d) 15 minutes

Ans. **Dislocation**

A dislocation is a separation of two bones where they meet at a joint. Joints are areas where two bones come together.

1. **Dislocation of Lower Jaw** : Generally, it occurs when the chin strikes to any other object. It may also occur if mouth is opened excessively.
2. **Dislocation of Shoulder Joint** : Dislocation of shoulder joint may occur due to sudden jerk or a fall on hard surface. The end of the humerus comes out from the socket.



Dislocation of Right Shoulder

Q.3. Write the signs & symptoms and treatment of dislocation.

Ans. Discuss the preventive measures of dislocation.

Signs and symptoms :

A dislocated joint may be

- Accompanied by numbness or tingling at the joint or beyond it.
- Intensely painful, especially if you try to use the joint or put weight on it.

-
- Limited in movement.
 - Swollen or bruised.
 - Visibly out of place, discoloured, or mis-happen.

Treatment of Dislocation- First-aid

- | | |
|-------------------------|-----------------------------|
| 1. Rest of injured part | P – Protection |
| 2. Elevate if possible | R – Rest |
| 3. Support the part | I – Ice |
| 4. Tie for support | C – Compression wound |
| (Rest Therapy) | E – elevate if feel comfort |
| | (Price therapy) |

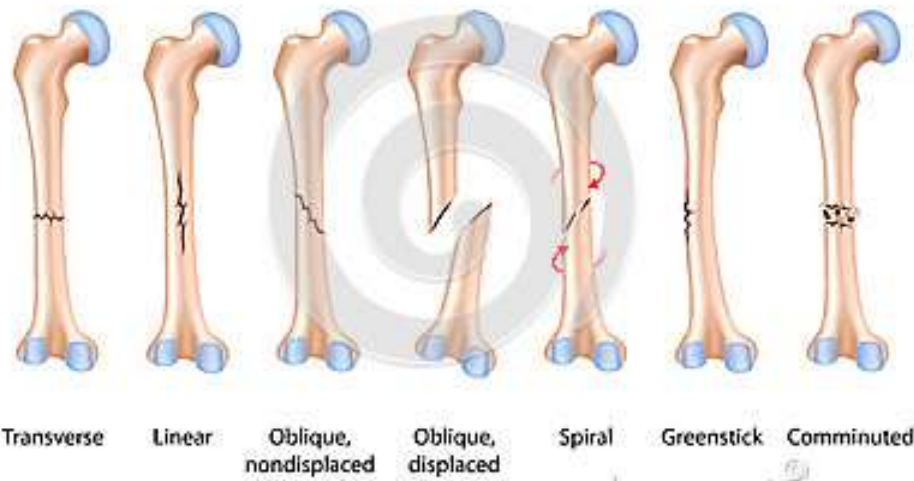
Prevention of Dislocation of Joints :

1. Adequate warm-up should be performed prior to any physical activity.
2. Proper conditioning should be done in preparatory period.
3. Stretching exercises should be included in warm-up.
4. Players should be careful and alert during practice and competition.
5. Protective equipments should be used as per the requirement of the games/sports.
6. Practice should be discontinued during fatigue.
7. Players should have good anticipation and concentration power.
8. Always obey the rules and regulations.
9. Proper cooling down after the physical activities.

Q.4. Enumerate the types of fractures? Write briefly about any three type of fracture?

Ans. Types of Bone Fractures

Types of Bone Fractures



- Greenstick fracture : An incomplete fracture in which a bone bends and cracks. This type of fracture usually occurs in children because their bone are soft and flexible.
- Transverse fracture : A fracture at a right angle to the bones axis or a straight break right across a bone.
- Oblique fracture : A fracture is a stanted fracture that occurs when a force is applied diagonally an angle to a bone's long axis.
- Impacted fracture: It is loss of continuity in the structure of bones.
- Stress fractures : It is a crack in bone due to high impact physical activity.

-
- **Comminuted Fracture** : A fracture in which the bone fragments.

Q.5. Discuss the causes of fracture?

Ans. Fracture usually occurs due to a high impact on the bone. It can be caused by overuse.

The most common causes of fracture are:

1. In such sports events where there is a high impact.
2. Traumatic, forceful and unnatural movements of the body.
3. Prolong long distance walking & running
4. Sudden falls on hard surface
5. Direct strike or hit with any solid sports equipment
6. Osteoporosis

Long Answer type Question (5 Marks each)

Q.1. How you will prevent injuries in sports?

Ans. **Prevention From Sports Injuries**

Competitive athletes may have difficulty avoiding sports injuries due to the intensity and frequency of their training and competition. However, it is possible to prevent most of the sports injuries by undertaking following preventive measures.

1. **Proper warming up** : Before the start of any practice of competition proper warming-up is essential. Sports injuries can be prevented to a greater extent. Proper warming up helps our muscles to get ready for the work.
2. **Proper conditioning** : Many injuries occur due to weakness of muscles which are not ready to meet the demand of sports. So, for getting proper

compatibility is a must for muscular power training load and circumference training weight training circuit training methods which develops Neuro-muscular co-ordination among muscles and prevents us from injuries.

3. **Balanced diet :** Balanced diet helps us (to some extent) prevent from injuries. For example, intake of calcium, phosphorous and vitamin D in lots of quantity to meet demands of muscles and organs to practice of activities.
4. **Proper knowledge of sports skills:** Proper knowledge of sports skills is necessary for the prevention of injuries. Players are fully skilled or sound knowledge of sports skills can prevent injuries.
5. **Use of protective equipment :** The use of protective equipment is necessary for the prevention of sports injuries. So always, wear protective equipment while playign sports. They provide security to the bodies. For their better results, always try to put on high quality protective equipments.
6. **Proper sports facilities :** Sports facilities and sports injuries have relation between them. In fact, sports injuries can be prevented if there are high-quality protection sports equipment and proper play grounds are available for practice and competition.
7. **Unbiased officiating :** If the team officials take decisions without any bias, injuries can be minimised. If the officials or referees practise partiality, these may be more changes of indiscipline among players which leads to injuries. So unbiased officiating can prevent injuries in sports fields.
8. **Not to do overtraining :** Physical training should be gradually increased to avoid injury. Exercise should

be according to the current status of physical fitness level of the athletes to increase the strength and quality of muscular. Avoid training which muscle is fatigued or weakened.

9. **Use of proper technique** : Using proper techniques of playing different sports prevents us from severe sports injuries, such as tendonitis and stress fracture.
10. **Obeying the sports rules** : Obeying the sports rules is also helpful in preventing sports injuries to a greater extent.
11. **Proper cooling down** : After regular practice or competition, cooling down is equally important as warming-up before practice or competition. Cooling down should be done properly

OR

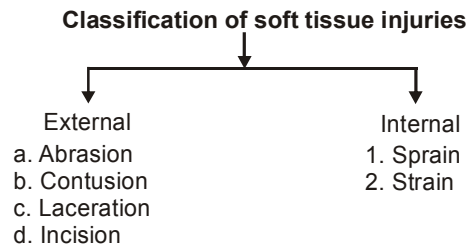
Tips of Preventing of Sports Injuries

1. Avoid training when you are tired.
2. Increase your consumption of carbohydrate during periods of heavy training.
3. Increase in training should be matched with increase in resting.
4. Any increase in training load should be preceded by an increase in strengthening.
5. Treat even seemingly minor injuries very carefully to prevent them from becoming a big problem.
6. If you experience pain during training, STOP your training session immediately.
7. Never train hard if you are stiff from the previous effort.
8. Pay attention to hydration and nutrition.

-
9. Use appropriate training surfaces.
 10. Training and competition areas should be clear from hazards.
 11. Equipments should be appropriate and safe to use.
 12. Introduce new activities very gradually.
 13. Allow a lot of time for warming-up and cooling down.
 14. Check overtraining and competition courses before participation.
 15. Train on different surfaces, with the right footwear.
 16. Shower and change your dress immediately after cool down to maintain hygiene.
 17. Aim for maximum comfort when travelling.
 18. Stay away from infectious areas when training or competing very hard.

Q.2. Classified the soft tissue injuries cause & preventive measures in detail?

Ans. Soft tissue injuries mean injuries of muscles, tendons, ligaments, fascia, nerve, fibrous tissues blood vessels, synovial membranes. Basically soft tissues refers to tissues that connect, support or surround other structure & organs of the body.



Causes of soft tissue injuries

1. Over use

-
2. Falls
 3. Stops & twists
 4. Improper equipments
 5. New & Increased activities
 6. Fatigue
 7. Poor warming up
 8. Impact
 9. Unilateral movement
 10. Faulty techniques & posture

Prventive measures of soft tissue injuries.

1. Proper warming up
2. Appropriate condition of body.
3. Sound technical knowledge of skills and equipments.
4. Healthy diet.
5. Efficient use of techniques
6. Use of proper protective gears
7. No over training & over use of body
8. Obey safety rules
9. Fair and unbiased officiating
10. Proper cooling down.

Practice question

Short question (3 Marks)

Q.1. Describe three causes for sports injuries?

Q.2. How can sports injuries be prevented?

Q.3. What is the difference bone and joint injury? Explain with examples.

Q.4. Explain three sports injuries.

Long question (5 Marks)

Q.1. Explain preventive measures that can be take in against sports injuries.

7.6 First aid Aim & objectives

First aid: “It is care that is give to an injured or sick person prior to treatment by medically trained personel.”

OR

“First aid is a combination of some simple procedures and the application of common sense to relief an injured person.”

OR

It is an immediate & temporary care give to an injured or an accident or sudden illness before the services of a physician as obtained.

Aim of first aid:

The Aim of first aid to save the life of an injured & ill person.

Objectives of first aid

1. To preserve life
2. To alleviate pain & suffering
3. To prevent the condition from worsening
4. To promote recovery.
5. To procure Early medical Aid.

-
- (a) Doctors (b) Equipments
(c) facilities (d) Specific aids

Multiple choice questions (1 Marks)

Q.1. In what situations first aid is given?

- (a) In case of chronic disease.
(b) **In case of sudden illness or injury**
(c) Along with doctor's treatment
(d) Old wounds

Q.2. Which of the following comes under first Aid.

- (a) To go for doctor's consultation.
(b) **Preventing blood flow from the wounds**
(c) Immunization to prevent diseases
(d) Surgery

Q.3. Explain the objectives of first aids?

Ans. It is an immediate & temporary care given to a victim of an accident or sudden illness before the services of a physician is obtained.

Objectives of first aid

1. To preserve life
2. To alleviate pain & suffering
3. To prevent the condition from worsening
4. To promote recovery
5. To procure early medical Aid

- (a) Doctors (b) facilities & equipments
(c) specific aids

Practice question

- Q.1.** Explain the objectives of first Aid?
- Q.2.** When is first Aid given? Explain the objectives of first Aid?
- Q.3.** When is first Aid important? Explain the objectives of first Aid in detail?

Practice Question

Multiple choice question (1 Mark)

Q.1. Matching the following

- | | |
|--|------------------------------|
| 1. Components of physical fitness | A. Decrease in bone density |
| 2. Effect of exercises on cardiorespiratory system | B. Flexibility |
| 3. Effect of exercise on muscular system | C. Increase in endurance |
| 4. Physiological change due to old age | D. Improvement in body shape |

- (a) **1B, 2C, 3B, 4A** (b) 1C, 2D, 3A, 4B
(c) 1D, 2C, 3B, 4A (d) 1A, 2C, 3B, 4D

Q.2. Matching the following

- | | |
|---------------------------|--------------------------------|
| 1. Security of life | A. Injury of hard tissue |
| 2. follow rules of sports | B. Injury of soft tissue |
| 3. strain | C. First Aid |
| 4. fracture | D. Prevention of sports Injury |

- (a) 1C, 2D, 3A, 4B (b) **1C, 2D, 3B, 4A**
(c) 1A, 2B, 3C, 4D (d) 1D, 2C, 3B, 4A

Q.3. Classify sports injuries and write down the aim of first Aid?

2+3

UNIT - 8

Biomechanics and Sports

UNIT - 8

Biomechanics and Sports

Key Points :

- 8.1. Meaning & Importance of Biomechanics
- 8.2 Types of Movements (Flexion, Extension Abduction and Adduction)
- 8.3 Newton's Laws of motion & its application in sports
- 8.4 Friction & Sports.

8.1 **Meaning & Importance of Biomechanics**

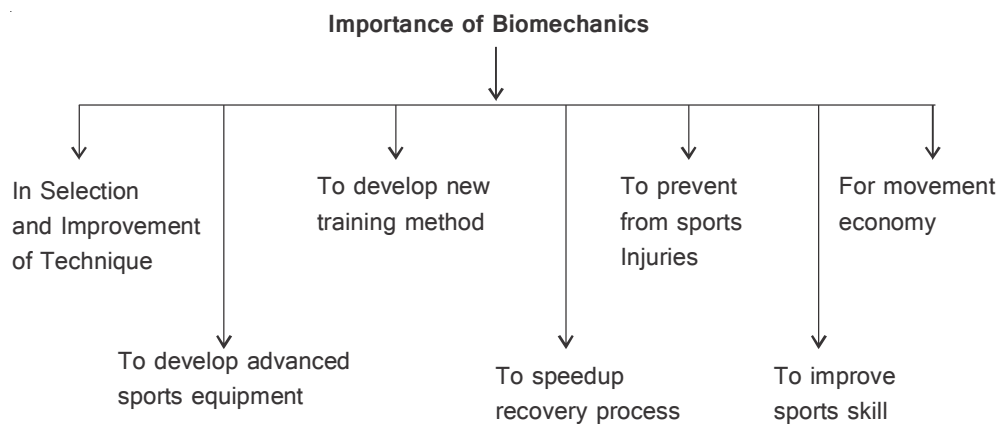
Meaning of Biomechanics:

Bio + Mechanics

Bio → Living organism

Mechanics → Branch of Physical science which deals with force acting on a body in static condition or in moving condition.

Biomechanics: is the study of forces & their effects on human being is moving or in static condition.



MCQ | Objective Types Question Answer

Q.1. Which is not the Importance of Biomechanics

- (a) Improvement of Technique
- (b) To understand the structure of Movement & effect of forces on the Movement
- (c) **To understand Physiology of human body**
- (d) Improvement of sports Equipments

Q.2. Biomechanics Deals units.

- (a) Muscles involved in Movement
- (b) **Effect of force on Different Movements done by human body**
- (c) To understand the physiology of the body
- (d) To understand Time & Distance concept of Various Movements

Long Answer type Question (5 marks)

Q.1. What is Biomechanics? How it helps in the field of sports & games. 1 + 4 = 5

Ans. Bio : → living organism

Mechanics : Branch of Physics. Which deals with effect of force on the object

BioMechanics is branch of Science which deals with effect of forces acting on a living organism in moving condition or in Stationary condition. Biomechanics helps in the field of sports in the following way.

1. **Improvement of Technique:** Biomechanics helps to improve technique. It determine how the technique should be execute to get best result.

Example: Shifting from orthodox to discoput Technique is shotput

2. **Improvement of Equipment:** It helps to Improve equipment According to nature & safety of the game for example in increase in thickness of mat for high jump
3. **Improvement in Training method:** It helps to develop new Training method to get better result. for example Development of Isotonic mehtod to develop strength.
4. **Devlopment of Skill:** It helps to develop skill of the sports. Example: Devlopment in the skill of fielding in cricket.

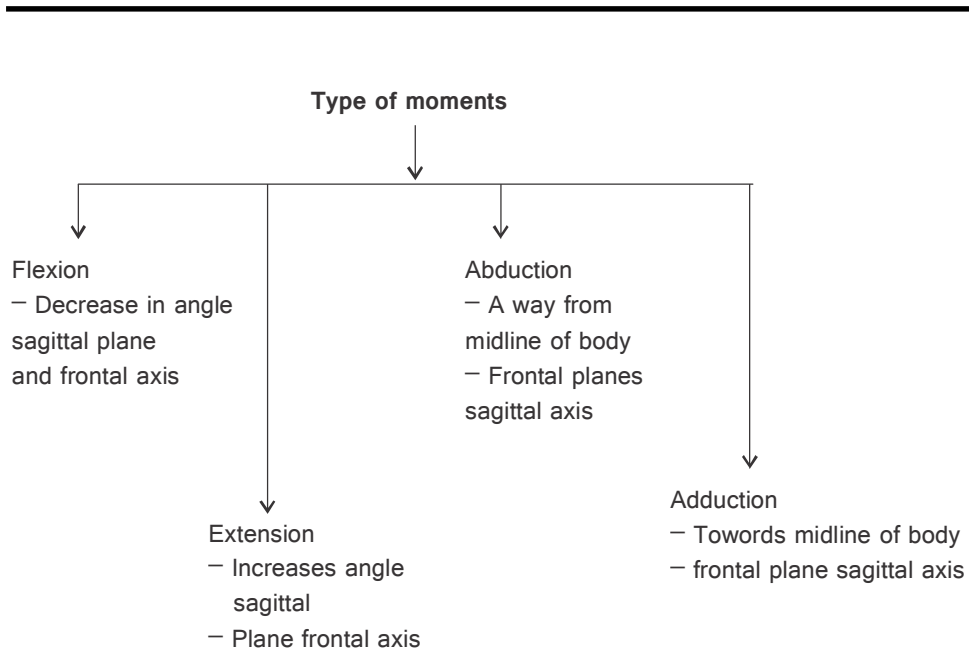
Questions (3 Marks)

- Q.1. What do you understand by word Biomechanics? Write any two importance of biomechanics. 1 + 2 = 3
- Q.2. Biomechanics helps to improve technique skill & equipment of sports? Explain with suitable examples.

Questions (5 Marks)

- Q.1. What do you under understand by Biomechanics? Explain its importance with four suitable examples
- Q.2. What is Biomechanics how it helps to promote sports & games.

8.2 Types of Movements (flexion, Extension, Abduction, Adduction)



Objective Types/MCQ (1 Mark)

Q.1. Match the following.

- | | |
|---------------|------------------------------------|
| (a) Flexion | (i) Increase in Angle |
| (b) Extension | (ii) Away from Mid line of body |
| (c) Abduction | (iii) Towards the Mid line of body |
| (d) Adduction | (iv) Decrease in angle |
1. a-IV, b-I, c-III, d-II
 2. a-IV, b-I, c-II, d-III
 3. **c-II, d-III, a-I, b-IV**
 4. c-I, d-IV, a-III, b-II

Q.2. Bending of Elbow when our hand is going toward our chest is

- | | |
|--------------------|---------------|
| (a) Flexion | (b) Extension |
| (c) Abduction | (d) Adduction |

(4) Extension: It is that movement

- In which the angle between the bone of that joint on which movement is occurred will increase.
- It always occurs at sagittal plane & frontal axis

Example: Straightening of elbow from bending position

- Straightening of knee from bending position in leg press exercise
- In leg press exercise flexion of knee joint and extension of knee joint take place.

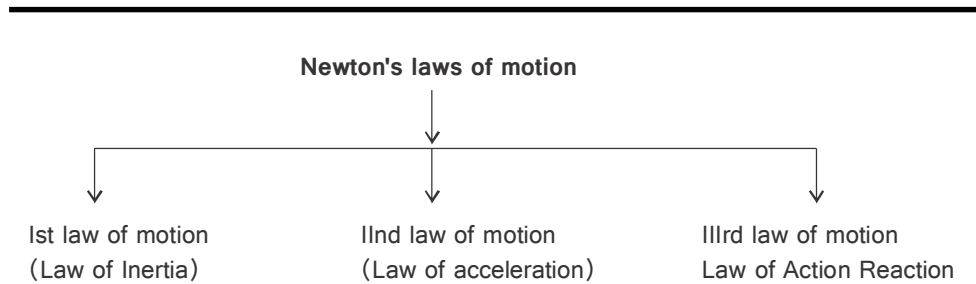
Questions (3 Marks)

- Q.1. What is the Abduction? Give Two suitable examples
- Q.2. What is Flexion? Give two suitable examples.
- Q.3. Differentiate Between Flexion & Extension with suitable examples.
- Q.4. Differentiate between Abduction and Adduction.

Questions (5 Marks)

- Q.1. Explain Abduction, Adduction, Flexion & Extension with suitable examples.
- Q.2. How we can Identify the Abduction, Adduction, Flexion & extension movements in various joints of our body? Explain with examples.

8.3 Newton's Laws of motion and their application in sports.



MCQ | Objectice Types Question Answer (1 Marks)

Q.1. Newton's IInd law is also known as

- (a) Law of Action Reaction
- (b) Law of Inertia
- (c) Law of Acceleration
- (d) Law of velocity

Q.2. In the long jump take off which law works

- (a) Ist law of newton
- (b) IInd law of newton
- (c) **IIIrd law of newton**
- (d) Low of conservation of mass.

Q.1. What are the newton's law of mation? Explain the Application of IInd law of Motion (any two applications) 3 + 2 = 5

Ans. **Ist Law of Motion (Law of Inertia):** any object will be remains in its position until or unless any external force is applied on it.

IInd law of motion (Low of Acceleration): The rate of change of acceleation is directly proportional to the force applied on the object and Inversly proportional to the mass of the object.

IIIrd law of motion (low of action and Reaction): There will be equal & opposite reaction to each & every action

Application of IInd law of motion

Example 1: According to IInd law motion if we want to produce acceleration in football Then a large force will be required to put on the ball. In the same ratio to which force is applied on the ball will be accelerate.

Example 2: Landing of high jump initaly done on the sand but with the time change now landing of high jump will be done on the mats as according to IInd law when rate of change of momentum will be done in large time period less force will be produce which will helpful to avoid injury. So according to IInd law landing on the mats is more favourable for high jumper to avoid injury.

Questions (3 Marks)

Q.1. Explain the Ist law of motion with suitable examples. $2 + 1 = 3$

Q.2. Write the IInd law of motion? Give one suitable example.

$$2 + 1 = 3$$

Q.3. Explain all the three laws of motion. $1 + 1 + 1 = 3$

Q.4. To accelerate any object what condition should be follow according to IInd law of motion. Explain with suitable examples.

$$2 + 1$$

Questions (5 Marks)

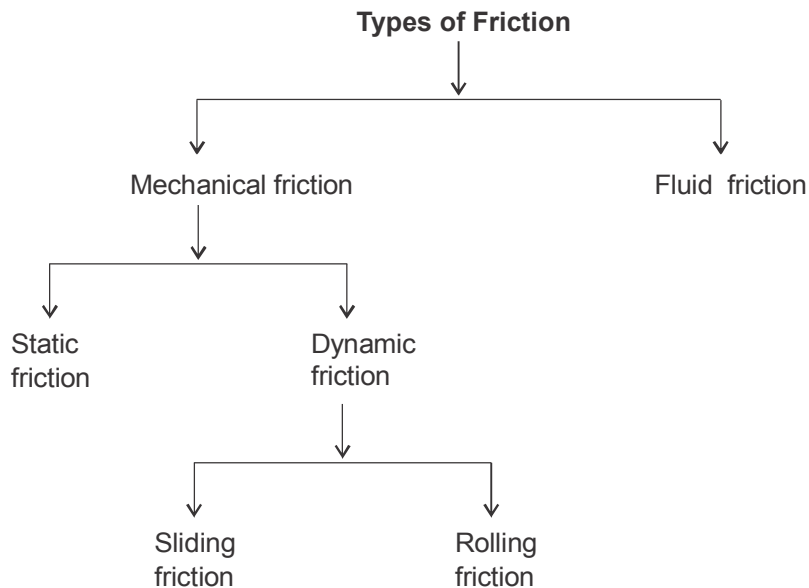
Q.1. Explain how newton's law of mation help to enhance sports performance with suitable examples.

Q.2. State laws of motion & there applications in the field of sports.

8.4 Friction & Sports.

Friction: is a force that devlops when the surfaces of two objects comes in contract to each other & there will be relative

motion between these objects or tends to do relative motion between these two objects. Friction force always acts in opposite direction to the movement.



MCQ | Objective Types Question Answer

- Q.1. The force which opposes the relative motion between the surfaces of two objects is known as
- (a) **Frictional force** (b) Gravitational force
(c) Applied force (d) Tension force
- Q.2. The force produced when the surfaces of two objects come in contact of each other & tends to move but there is no relative motion between them is known as
- (a) **Static friction** (b) Sliding friction
(c) Rolling friction (d) Fluid friction

Short Answer type Question (5 marks)

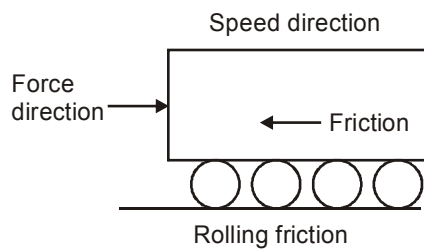
Q.1. What is Friction? Discuss various types of Friction.

Ans. Friction is the force that opposes relative motion between the two surfaces that come in contact. Friction always acts in

the opposite direction of the applied force. Type of frictions:

Static friction: The opposite force that comes into play when one body is actually not moving over the surface of another body. Dynamic friction are two types.

Rolling friction: The oppsing force that comes into play when body is actually rolling over the surface of another body. For example, hockey/cricket ball is hit



Sliding Friction: The opposite force that comes into play when one body is actually slide over the surface of other body for example sliding on the field of cricket by a fielder.

Long Answer type Question (5 Marks)

Q.1. Differentiate between advantage & disadvantage of friction in the field of sports.

Ans. Friction is usually called necessary evil. It means it is essential in the life and we can not do any work without it.

Advantages of friction

(a) Keeps the object at position by friction, the objects can be placed at position and shaped.

Disadvantages of friction

(b) Wear and tear of object:
Due to friction, there is wear and tear of objects.
Lubrication is used to allow the parts to move easier, moreover, prevents wear and tear.

(b) Helps to move: Frictional forces helps to move the object by friction. It helps in running, walking. with friction of feet/ shoes on the surface, helps to speed. Frictional force helps to move the object in the speed. For example: Spikes are used by the athletes to run fast.

(c) Hold or grip an object: with the help of friction the ridges of skin of our fingers and our palm enable us to grab and hold objects. For example– In badminton the players use grip to hold it.

(d) Produce heat: The law of conservation of energy states that the amount of energy remain constant. Thus, the energy that is

(b) Wastage of Energy: Excess of friction means extra energy, thus energy is being wasted.

(c) Slow down the Speed: In the roller Sketting, Rolling Shoes and smooth surface are used to minimize friction.

(d) Makes movement difficult: Friction can make the job more difficult when one has to move the object. Excess friction can make it difficult

Questions (3 Marks)

- Q.1. What do you understand by friction? Explain its types
- Q.2. Explain dynamic friction with suitable examples
- Q.3. What is the difference among static friction, kinetic friction & fluid friction.

Questions (5 Marks)

Q.1. How friction is helpful in sports give 5 suitable examples.

Q.2. What is friction? Explain its role in sports.

MCQ | Objective Types Question Answer

Q.1. Match the following (1 Marks)

- | | |
|------------------------|--------------------------|
| (a) Abduction | (i) Decreasing in Angle |
| (b) Newton's 2nd law | (ii) Frictional force |
| (c) Force That opposes | (iii) Away from midline |
| Movement | |
| (d) Flexion | (iv) Law of Acceleration |

(a) a – iii, b – iv, c – ii, d – i

(b) a – iv, b – iii, c – ii, d – i

(c) a – iv, b – iii, c – i, d – ii

(d) a – ii, d – iv, b – iii, c – i

Q.2. Match the following marks

- | | |
|-------------------------|--|
| (a) Mechanical friction | (i) Increased in angle |
| (b) Law of Inertia | (ii) Object are solid comes in contact |
| (c) Take off highjump | (iii) 3rd law of motion |
| (d) Extension | (iv) Things Remains in its position |

(a) a – ii, b – iv, c – iii, d – i

(b) a – iv, b – ii, c – iii, d – i

(c) a – iv, b – ii, c – i, d – iii

(d) a – iii, b – ii, c – i, d – iv

-
- Q.3. What do you understand by Biomechanics Explain the flexion with two suitable examples? $1 + 1 + 1 = 3$
- Q.4. Differentiate between flexion & Extension with examples. $1\frac{1}{2} + 1\frac{1}{2} = 3$
- Q.5. Differentiate between Abduction & Adduction with suitable examples $1\frac{1}{2} + 1\frac{1}{2} = 3$
- Q.6. Explain Newton's 3rd law with two suitable examples from the field of sports. $1 + 2 = 3$
- Q.7. Enlist the names of Newton's laws of motion & explain any one of them with suitable examples. $1 + 2 = 3$
- Q.8. What is biomechanics? Explain extension, Abduction and Adduction movements? $1 + 4 = 5$
- Q.9. Explain the two Newton's laws of motion? Write any four importance of 2nd law of motion $3 + 2 = 5$
- Q.10. What is friction? Explain advantages & disadvantages of friction in sports. $1 + 4 = 5$

UNIT - 9

Psychology and Sports

UNIT - 9

Psychology and Sports

Key Points :

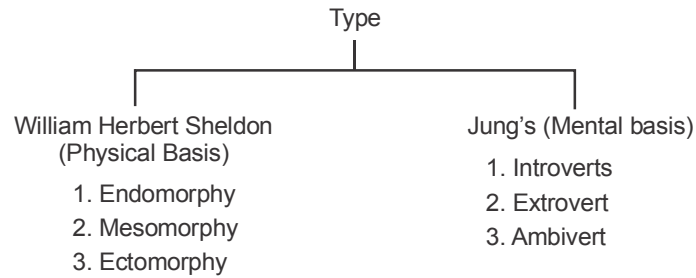
- 9.1. Personality; its definition and type-trait and type (Sheldon and jung classification) and big five theory.
- 9.2 Motivation, its type and techniques
- 9.3 Exercise Adherence; Reasons to Exercise, Benefits of Exercise.
- 9.4 Strategies for Enhancing Adherence to Exercise.
- 9.5 Meaning, concept and types of Aggressions in sprots.

- 9.1 The word personality is derieved from the latin word 'Persona', which means 'the mask'. So we say that personality is a mask that is used by an individual to deal with the society or the enviornment. Personality covers all the physical, mental, social, emotional interest and behavioural qualities of an individual.

“It is the integration of an individual’s most characterstics structure, mode of behaviour, interest, attitudes, capacities, aptitudes, and abilities.

“Personality is the sum total of all biological innate disposition, impulses, tendencies, aptitudes and instincts of the individual, disposition and tendencies acquired by experience”.

Personality: Includes the physical, mental, social and emotional qualities, interest and behavior of an individual”.



Big five personality theory

- | | |
|----------------------|------------------|
| 1. Openness | 4. Agreeableness |
| 2. Conscientiousness | 5. Neuroticism |
| 3. Extraversion | |

- | | | |
|-------------------|-----------------------------|------------------------|
| 1. Opnness | 2. Conscientiousness | 3. Extraversion |
| Social | Self discipline | Energetic |
| Imaginative | Dedicated | Positivenees |
| Interest | Hard worker | Accepting nature |
| Curiosity | Aspirant | Social |
| Creativity | | Talkative |
| Emotional | | Friendly |

4. Agreeableness 5. Neuroticism

- | | |
|---------------|------------|
| Cooperative | Angryness |
| Managed | depression |
| Soft hearted. | worried |

Multiple Choice Question :

- Q.1. The word personality is derised from the latin word _____.
- | | |
|--------------------|----------------|
| (a) Persona | (b) Endomorphy |
| (c) Perjona | (d) Person |
- Q.2. The person having round body shape is called _____.
- | | |
|------------------------|-----------------|
| (a) Endomorphic | (b) Mesomorphic |
|------------------------|-----------------|

-
- (c) Ectomorphic (d) Ambivert
- Q.3. A person having strong built up is known as _____.
- (a) Endomorphic (b) **Mesomorphic**
(c) Ectomorphic (d) Ambivert
- Q.4. A thin, long, depressed personality trait is known as _____.
- (a) Endomorphic (b) Mesomorphic
(c) **Ectomorphic** (d) Ambivert
- Q.5. The physical traits Endomorphic, Mesomorphic, Ectomorphic is given by _____.
- (a) **Sheldon** (b) Jung
(c) Big-5 (d) Eysean
- Q.6. Traits of High-self confidence, social, friendly, confident etc lies in
- (a) Ambivert (b) **Etrovert**
(c) Introvert (d) Ectomorphic
- Q.7. Traits of Etrovert, Introvert and Ambivert is given by _____.
- (a) **Jung** (b) Sheldon
(c) Big-5 (d) Eysean
- Q.8. Big-5 theory is also known as _____.
- (a) **Five factor model** (b) Five traits model
(c) Five personality model (d) Five temperanent model.
- Q.9. The word 'Endo' in endomorphy is for _____.
- (a) **rounded body** (b) musculoubody
(c) thin body (d) Lazy body

Short Answer Type Question :

Q.1. Elaborate the classification of personality given by Herbert Sheldon.

Ans. Sheldon classified the body into 3 different parts: He was an American psychologist who was born in 1, Nov 1898. He divided personality on the basis of three physical structure.

(1) Ectomorphy with Cerebrotonia:

Ectomorph has narrow shoulder, thin arms and legs, a narrow face and a flat chest. They are slim and slender, thoughtful, quite, self conscious, pessimistic and are not fond of physical activity.

(2) Mesomorphy with somatonia:

Mesomorph are likely to have an athletic physique. Their shoulders are broad, chest narrow, arms and legs strong. They have more muscles than fat. They are courageous, adventurous, assertive and competitive in nature.

(3) Endomorphy with viscerotonia:

Endomorphs have a round body characterised by wide hips, narrow shoulders and plump fat they have extra body fat on their body parts such as arms and thigh. They are relaxed, easy going, fun loving and sociable in nature.

Q.2. Explain the Jung's classification of human personality.

Ans. According to Carl G. Jung's human personality can be classified into three categories.

1. Introvert: If an individual is motivated or energised by the internal world of thoughts, feelings and reflections is known as Introvert. They are having poor self confidence, moody,

unsocial, quiet and pessimist

2. **Extrovert:** This kind of individual associated with external world of object and other people. They believe in action, social settings, interacting. They are friendly, confident responsive and lively leader.

3. **Ambivert:** This kind of people have the mix trait of Introvert and Extrovert: They are having few friends.

Long Answer type Qquestion (5 marus)

Q.1. Define personality, write any four traits of Big-5 theory of personality in detail. 1 + 4 = 5

Ans. The word personality is derived from the latin word "Persona" means "Mask". But it has the broder meaning like Biological-Appearance, Psycholgical-Tolerance and sociological-Character. The following are the traits of Big-5 personality

1. **Openness Traits:** The accessment of openness traits shows that how the person is

- * Imaginative
- * Insightful
- * having variety of interest
- * with degree of intellectual curiosity
- * creative
- * able to enjoy the new experiences
- * able to learn new changes & concept

2. **Conscientiousness:** The accessment of this trait show that how the person is able to

- * Compete with life challenges
- * control self discipline

-
- * To act dutifully
 - * To plan & to organize
 - * Work independently
 - * To do hard work
- 3. Extraversion:** The assessment of this trait shows that how the person.
- * is energetic
 - * has positive emotions
 - * has Assertiveness
 - * is sociable
 - * is talkative
 - * is fun loving
 - * has friendly nature or has tendency to make new friends
 - * able to get affection from other
- 4. Agreeableness:** The assessment of this trait shows that how the person.
- * has sense of cooperation
 - * is systematic
 - * is kind
 - * is friendly
 - * is gentle
- 5. Neuroticism:** The assessment of this trait shows. How the person.
- * has emotional stability
 - * is able to control anger
 - * is able to control the level of anxiety

* is able to protect him self from depression.

(Description of any four traits)

Practice Questions:

Q.1. Define personality. Differentiate between Introvert and extrovert.

1 + 2 = 3

Q.2. Personality traits are very useful for the Identification of sports. How the knowledge of Sheldon's traits are useful in the selection of sports.

1 × 3 = 3

Q.3. Differentiate between Endomorphy and mesomorphy. 3

Q.4. Personality and selection of sports are the two sides of a coin. Justify.

Q.5. Elaborate the Big-5 theory of personality. 1 × 5 = 5

Motivation

9.2 The word motivation is derived from the latin word "movere" which means to move so in the condition of motivation an individual is moved by internal & external forces towards the goal.

It is widely accepted that "Miracle is possibal only when you are motivated" It is nothing but arousing Sustaining and regulating the activity. No learning is successful unless it is motivated enough. In sports, the role of teacher and coachs are not to teach, train the athlete but motivate to lean.

11.3 Motivation

(Meaning)

(That state of mind in which an individual is forced by external & internal forces to achieve the goal)

(Types)

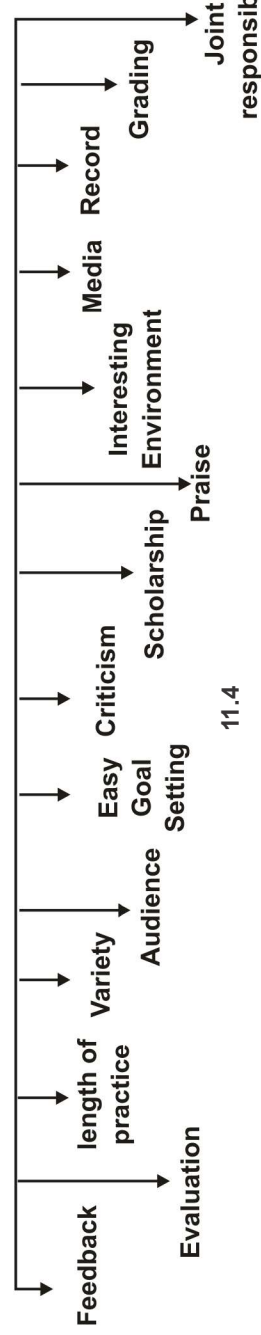
Intrinsic Motivation

An individual is forced by internal forces to achieve the goal i.e. display superiority, Social approval, enjoyment, Satisfaction etc.

Extrinsic Motivation :-

An individual is forced by external forces to achieve the goal i.e. reward, punishment cash incentives, praise etc.

(Techniques)



11.4

Multiple Choice Questions:

- Q.1. The word motivation is derived from the latin word _____
- (a) **movere** (b) moves
(c) moorer (d) move
- Q.2. Natural motivation is also know as –
- (a) **Intrinsic** (b) Extrinsic
(c) Intrinim (d) Extreme
- Q.3. If an Individual is moved by Internal external forces towards the goal is know as
- (a) Goal selting (b) outer forces
(c) Inner force (d) **motivation**
- Q.4. Reward, cash, punishment falls in which catagory of
- (a) **External** (b) intrinsic
(c) Psychological (d) Biological

Short Answer Type Questions: (3 marks)

Q.1. Explain the types of motivation?

Ans. Motivation are two types

- (i) **Intrinsic Motivation :-** In this type of motivation an individual is forced by his internal forces to achieve the goal. In intrinsic motivational state “an individual is motivated by their own desire not by any external factor” i.e. for enjoyment, for satisfaction, to show mastery over skills, to display superiority or to get social approval, fame etc.
- (ii) **Extrinsic Motivation :-** In this kind of motivation, an individual is forced by the external forces to achieve the

goal such as prize, praise, scholarship, grade, job, money etc.

In the extrinsic motivational state “an individual is motivated by some external factors.

Long Answer Type Questions: (5 marks)

Q.1. Enlist the different motivational techniques used in sports and explain any four techniques in detail.

Ans. Following are the motivational techniques used in sports

Evaluation, variety, Role of spectators. Criticism. Modern equipment, Length of practice, level of aspiration/Goal setting Innovative curriculum, Reward punishment, Praise Appreciation, Competition feedback, self appraisal, social pressure, Grading and reward, Success Achievement, Role of media

“Motivation is the general level of arousal to action in an individual”.

Following mentioned techniques of motivations are applied on sportspersons, which can enable them to achieve the top position in the field of sports and games.

- (i) **Evaluation** :- Evaluation make and aware the sportsmen from his abilities and motivate him/her for higher position.
- (ii) **Variety** :- Variety in the training programme make the practice more interesting and always to motivate the sportsman to perform better to best.
- (iii) **Role of Spectators** :- The presence of audience / spectators help to sportsman to perform in dynamic form too.
- (iv) **Criticism** :- Criticism for the poor performance of an athlete motivate to perform better.
- (v) **Cash Prizes, Scholarship etc.** :- Good incentive to the sports persons always motivate and strives hard to achieve

better in the competitions.

- (vi) **Latest Equipments** :- Use of latest equipments in training make the training more interesting and motivated the athlete to achieve the goal.
- (vii) **Practice Session** :- By reducing the length of practice an athlete is motivated to be continue in their training and to achieve the goals.
- (viii) **Resetting of Goal** : - Resetting of goal from easy to complex motivate the athlete to continue in training to achieve the goals.
- (ix) **Awards** :- Awards for good performance of athlete motivate him to do better.
- (x) **Praise** :- Praise given by the society for the performance of athlete always motivate athlete to do better.
- (xi) **Positive Enviornment** :- Environment make more interesting by including music audience etc. and interesting environment help to perform better.
- (xii) **Role of Mass Media** :- When the performance of an athlete is telecasted by media he is motivated to perform well, to get praise from the society.
- (xiii) **Record** :- Record always aware an athlete to his current performance and his past performance which help to motivate him to perform better.
- (xiv) **Jobs** :- On the basis of achievement and educational qualifications, outstanding sports persons should be offer good jobs. There are various department — Police, Bank, Railways, Air India etc. offer good jobs. This opportunity is also a motivating force.
- (xv) **Feed back** :- With the help of feedback an athlete can remove easily negative factors from his performance and try to perform better.

(xvi) **Sharing Responsibilities** :- Sharing responsibilities always help to develop and motivate an individual to perform well.

(Explanation of any four points in detail)

Practice Questions:

Q.1. Define motivation. Identify and Reward is a type of motivation which forces an athlete to excel in sports, Discuss.

Q.2. Different motivational techniques work differently for every athlete. Enumerate three motivational techniques used in sports.

1 × 3 = 3

Q.3. Define Intrinsic Extrinsic motivation. Elaborate any three motivational techniques used in sports. 2 + 3 = 5

Exercise Adherence: Refers to maintaining a systematic approach to exercise for a prolonged period of time following the initial adoption phase. Exercise Adherence reflects about the continued participation of an individual in exercise training programme.

Reason to Exercise: There are a lot of reasons to do exercise daily. It helps to perform daily tasks of an individual smoothly and efficiently. It differs person to person, ex. my grand parents reason to exercise is different from me, Reason for male and female may be different, and reason to exercise for children will be different. Reason to exercise for everyone will be dependent on the needs and requirements of the individual. It may be for to stay fit or for prevention of disease and disorder.

Need or Reasons to Exercise/Benefits of Exercise

Physiological Needs or Benefits of Exercise

- To improve the working efficiency of various system of such as
 - * Cardio vascular system
 - * Digestive system
 - * Respiratory system
 - * Nervous system
 - * Muscular system
 - * Skeletal system
 - * Excretory system
 - * Endocrine system

Psychological Needs or Benefits of exercise

- To reduce stress and Anxiety level
- To improve intelligence
- To improve personality
- To sharpen memory
- To improve self esteem
- To improve body image
- To improve attention and concentration
- To improve group behaviour
- To control aggression level
- For positive attitude
- To make good Habits
- To improve mood
- To recreate
- To better control overs emotions
- To improve motor learning

Health & Fitness Related Needs or Benefits of Exercise

- To prevent major and minor diseases
- To improve physical fitness
- To improve health related fitness
- To slowing down aging process
- To become more energetic
- To prevent obesity
- For better growth and development
- To maintain lean body mass

4. To adjust with working place or society.

5. To slowing down aginy process.

(a) **To inoprove working efficiency of all orgens:** Through participation of exercise programme, individual learn about body and its functional value in daily life. Exercise help to maintain or increase the efficiency of all organs of the body which helps to lead a happy life.

(b) To perform daily task efficiently: Exercise not only helps to maintain or develope physical fitness of an individual but also helps to develop self esteem, perception, relaxation, Reduce frustration etc which help him/her to perform daily task efficiently.

Q.7 Write any six benefits of exercise. or Enumerate any six Reason to exercise. $1/2 \times 6 = 3$

Ans. (a) Prevention from major disceases like coronary heart disease, diabetes etc.

(b) Helpful to improve personality.

(c) Helpful to improve the working of various system such as cardio vascular system, digestive system etc.

(d) Helpful to improve physical fitness as well as health related fitness.

(e) Helpful to improve group behavirous, attention and concentration.

(f) Help to make good habits such as discipline, hard working etc.

Long Answer Type Question (5 Marks)

Q.1. Participation in exercise programme for a long time helps to develope physiologically, psychologicaly and sociologicaly

individual in the society. Justify.

Ans. Exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness, following are the benefits of exercise.

(1) Physiological Benefits

Improve the working of variou system such as

- Cardiovascular system
 - Cardiac out put and stroke volume increased
 - Elasticity of blood arteries increased
 - Normal blood pressure
 - Heart rate per minute decreased
- Respiratory system
 - Min. volume and Tidal volume increased
 - Respiratory rate per min decreased
 - Vital capacity and total lung capacity increased
- Muscular system
 - Size of the muscles increased
 - Storage capacity of muscle increase
 - Maintained muscle tone

(2) Psychological Benefits

- (a) Stress and anxiety level : Participation in exercise release good harmone in our body which helps to reduce the stres and anxiety level.
- (b) Personality : Participation in exercise promote all the dimension of personality such as physical, mental, social and emotional.

-
- (c) Intelligence and memory: Participation in exercise has good effect on the working on nervous system which help to increase the level of intelligence and memory.
 - (d) Recreation : Participation in exercise is one of good source of recreation so helpful to recover from mental fatigrue.
 - (e) Group behaviour : Participation in exercise is helpful to improve group behavious as at the time of exercise person has to do exercise with his/her group member which is helpful in improving group behaviour.

(3) Health & fitness related benefits

- (a) Helpful to prevent from diseases like cancer, cronary heart diseases, diabetes etc.
- (b) Helpful to improve the components of physical fitnes such as strength, speed, flexibility, endurance etc.
- (c) Helpful to improve the components of health related fitness such as muscular strength, cardio vascular endurance, body composition etc.
- (d) Helpful to maintain healthy weight.

Practice Questions:

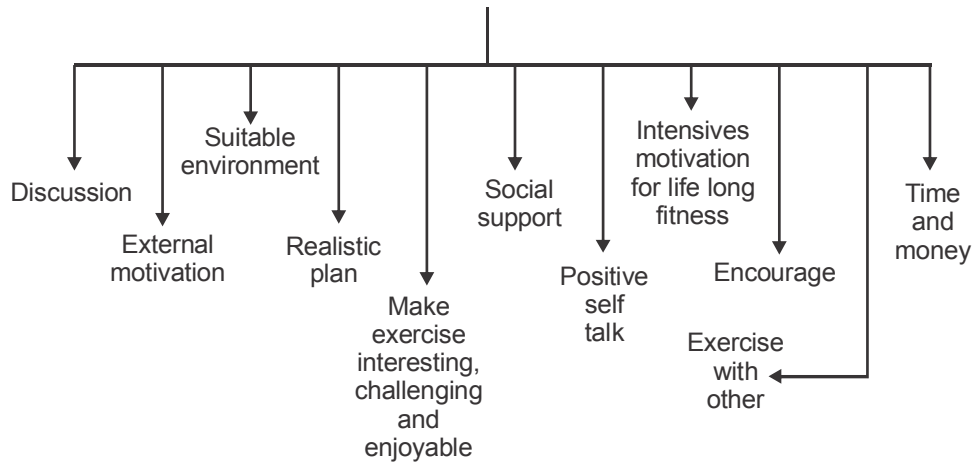
- Q.1. Elucidate any three Reasons to Exercise. $1 \times 3 = 3$
- Q.2. Define Exercis Adherence. Wirte any two physiological behefits of Exercise. $1 + 2 = 3$
- Q.3. Write any three psychological and physiological benefits of Exercise. $1/1/2 + 11/2 = 3$
- Q.4. Elucidate exercise adherence. Write any four health related benefit of exercise. $1 + 4 = 5$

9.4 Strategies for enhancing Adherence to exercise:

Strategies for enheneing adherence to exercise are the

methods which are used to enhance the consisting participation of people in exercise programme.

Strategies for Enhancing Adherence to Exercise



Multiple Choice Questions:

- Q.1. Methods which are used to enhance the participation of people in exercise programme is known as.
- (a) **Strategies** (b) techniques
(c) training (d) Skill

Long Answer Type Questions (5 Marks)

- Q.1. Explain any five strategies which are used to enhance adherence to exercise.

Ans: There are so many strategies used to enhance the adherence to exercise. A few strategies are given below

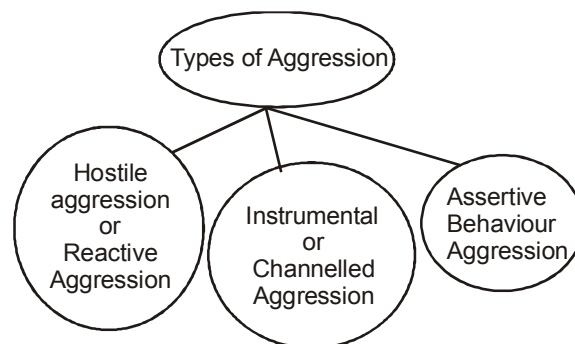
- (a) **Discussion** : With the discussion on the benefits of exercise, adherence to exercise can be improved.
- (b) **External motivation** : With the help of the positive reinforcement as praise, prize, records the such to exercise can be improved.
- (c) **Suitable environment** : At the time of exercise training programme suitable environment should be provided. If environment is with latest facilities it will to improve adherence to exercise.

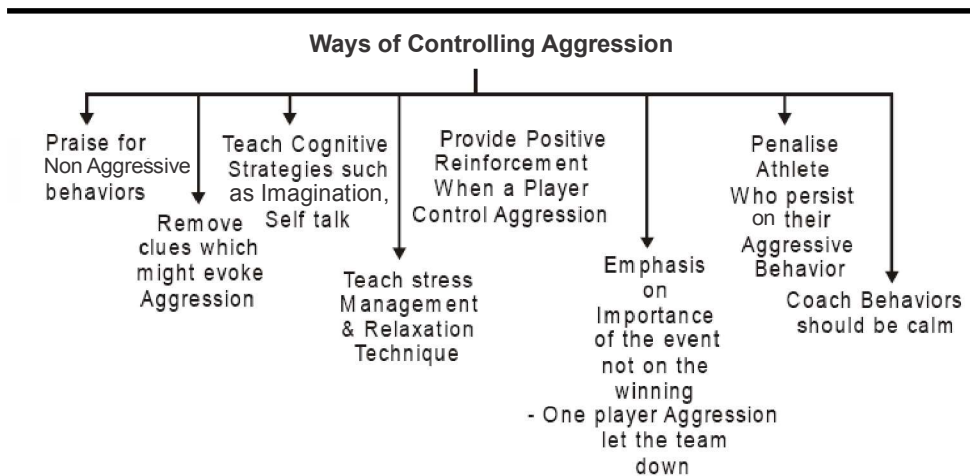
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- (d) **Realistic plan** : Planning & Goal setting should be realistic Goal setting should be according to the capability of the athlete such type of planing and goal setting improve the adherence to exercise.
 - (e) **Social support** : From family, school and society is helpful to enhance adherence to exercise.
 - (f) **Exercise with other** : Company of exercise partner improve the adherence to exercise.
 - (g) **Make exercise interesting, challengable and enjoyable** : Exercise plan should be intresting it should not be repeated daily. It should be challengeable and enjoyable.
 - (h) **Intrinsic motivation** : Intrinsic motivation for good health and good fitness is helpul to promote exercise adherence.
 - (i) **Time and money** : Sufficent availability of money and avilability of time helpul to promote exercise adherence

(Explain any five in detail)

Aggression

It is a physical or verbal behavior which is directed towards the goal of harming other living being either physically or psychologically.





The term aggression refers to a range of behaviors that can result in both physical and psychological harm to yourself, others, or objects in the environment. This type of behavior centers on harming another person either physically or mentally.

Concept. The concept of aggression is important to nursing because further knowledge of aggression can be helped to generate a better theoretical model to drive more effective, and intervention and prevention approaches.

Psychologists have given different views related to aggression. As per instinct theory, aggression is an inbuilt emotion in human beings. Per social learning theory, it is acquired, frustration theory pointed out that frustration is the cause of aggression.

Multiple Choice Question— (1 marks)

1. Behaviour Carried out with intention of harming other person is known as.

- (a) Stress
- (b) Motivation
- (c) **Aggression**
- (d) Tension

Q.2. Any physical behaviour intentionally aimed to injure other is known as—

- (a) **hostile aggression**
- (b) instrumental aggression
- (c) assertive aggression
- (d) negative aggression

Q.3. Unintentional physical harm is known as

- (a) hostile aggression
- (b) **instrumental aggression**
- (c) assertive
- (d) negative aggression

-
- Q.4. Verbal behaviour which harm the living being is known as
(a) Hostile aggression (b) Instrumental aggression
(c) **Assertive aggression** (d) Negative aggression

Long Answer Type Question

- Q.1. Write the meaning and concept of aggression Describe the types of aggression in sports.

Meaning—

Any physical or verbal behavior that is intended to harm another either physically or psychologically intentionally or unintentionally.

Concept— Different psychologists have given different meaning to the term aggression. As per instinct theory, aggression is an inbuilt emotion in human being, as per social learning theory, it is acquired. Frustration theory point out that frustration is the cause of aggression.

There are three types of Aggression in sports.

- (a) **Hostile Aggression:** Any physical behaviour which is aimed to physically injured the living being intentionally is known a Hostile Aggression.
- (b) **Instrumental Aggression:** Any physical behavior which is aimed to achieve high performance but unintentionally physically harm to the living being is known as instrumental Aggression.
- (c) **Assertive Aggression:** Any verbal behaviour under the Rules & Regulation of the sport which is used to harm psychological to living being. In this only legitimate forces are used.

UNIT - 10

Training in Sports

UNIT - 10

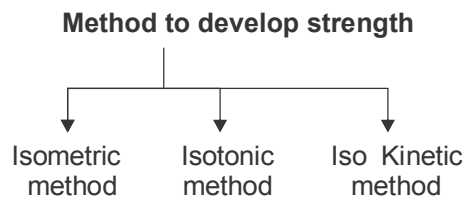
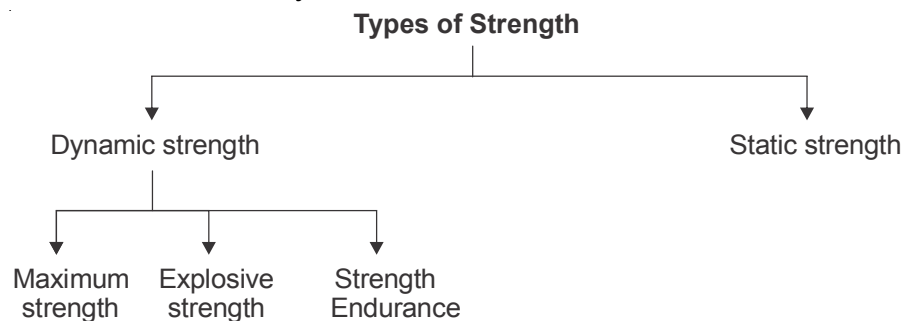
Training In Sports

Key Points :-

- 10.1 Strength - Definition, Types and methods of improving strength- isometric, isotonic and isokinetic.
- 10.2 Endurance - Definition, types and methods to develop endurance (continous training, interval training and fartlek training.)
- 10.3 Speed- Definition, types and methods to develop speed- (Acceleration run and pace run.)
- 10.4 Flexibility - Definition, types and methods to improve flexibility.
- 10.5 Co-ordinative Abilites - Definition and types.
- 10.6 Circuit training -Introduction and its importance

10.1 Strength

It is the ability to act or to over come the resistance.



Objective Type MCQ (1 Marks)

- Q.1 The method in which there will be no change in the length of the muscle is known as
- (a) **Isometric method**
 - (b) Isotonic method
 - (c) Isokinetic method
 - (d) Fartlek method
- Q.2 Name of the ability which help to over come the resistance with speed is known as
- (a) Maximum strength
 - (b) **Explosive strength**
 - (c) strength endurance
 - (d) static strength

Short Answer type Question (3 Marks)

Q.1 What is strength? explain its types?

Ans. Strength is an ability to act against a resistance. The following are its types.

- (a) Maximum strength: - Ability to act a against maximum resistance
- (b) Explosive strength: Ability to act aganist resistance with speed
- (c) Strength Endurance: Ability to act against resistance under condition of fatigue.

Long Answer type question (5 Marks)

Q.1. What are the methods for developing strength?

Or

Write the difference between Isometric, Isotonic and Isokinetic exercises.

Ans. **Strength** - It is the capacity of the whole body or of any of its parts to exert force.

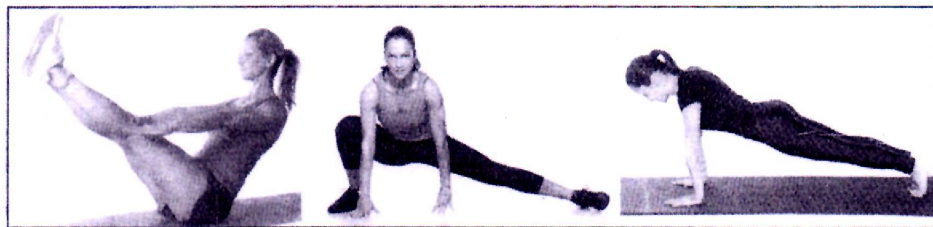
There are two types of strength - Dynamic and static strength
Following mention methods are used to improve strength.

1. **Isometric Exercise** : The word Isometric is comprised of 2 words "Iso", "same" and "metric", "length". Means when we do these exercises work done cannot be observed. These exercise require less time and equipments and can be carried out anywhere. These exercises are useful for maintaining strength in case of injury.

Eg. Archery, Weight lifting, Gymnastic are the examples of Isometric movements.

Work done = Force X Distance moved

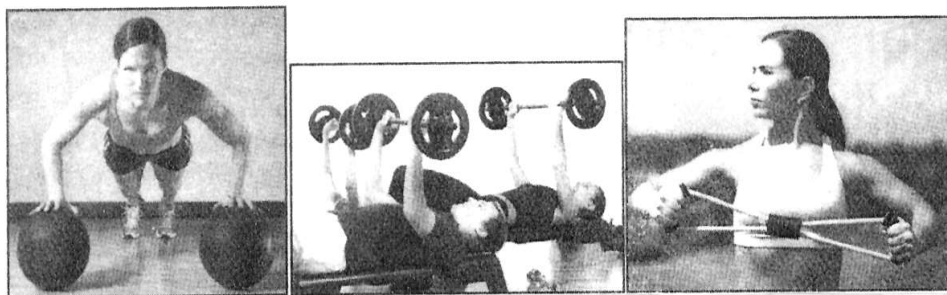
but distance moved is 0, therefore work done is zero.



2. **Isotonic Exercises** :- "Iso" Means 'same' and 'tonic' means tone.

In these types of exercise when we do movements it can be observed directly. The length of muscles can be seen and

called eccentric contraction and concentric contraction accordingly. Example When we throw a ball, jump, run, weight training, these type of contraction occurs. These Type of exercise is widely seen in games and sports. We can do these exercise with equipment or without equipment. These increase the length of the muscles and are good for conditioning in sports.



3. **Iso-Kinetic Exercises** -- “Iso” - ‘Same’ “and’ kinetic - motion’. These exercises were introduced by J.J. perrine in 1968. These exercise are done by specially design machine and are combination of Isotonic and Iso-metric exercises. These exercises develop strength of muscles. These type of movements are usually not applied in games and sports except water sports, skating, climbing, running etc.



3 Marks Question

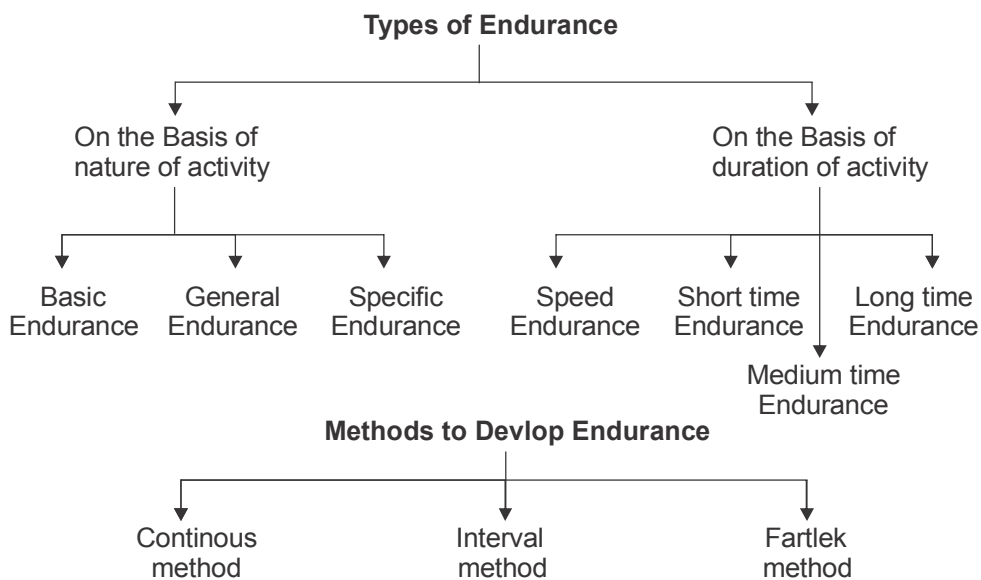
- Q.1. What is strength? Explain any two types of strength.
- Q.2. What do you understand by explosive strength and maximum strength.
- Q.3. What is strength? Name the training method to improve the strength & explain any one of them.

5 Marks Question

- Q.1. What is strength? Explain isometric method in detail?
- Q.2. Explain the Advance traing method to develop strength.
- Q.3. Explain Isometric, isotonic and Isokinetic method to develop strength.

10.2 Endurance

It is ability to continue the activity under the condition of fatigue or for a long time.



Objective Types/MCQ (1 Marks)

Q.1. Which is not the training method to develop Endurance.

- (a) Fartlek method (b) **Post iso metric stretch method**
(c) Continuous method (d) Interval method

Q.2. Speed play is another name of which method?

- (a) **Fartlek method** (b) Continuous method
(c) Interval method (d) Isokinetic method

Short Answer Type Questions (3 Marks)

Q. 1. Describe fartlek Training Method.

Ans. It is another method to develop the endurance ability. This method was developed by Swedish coach "Gosta Holmer" in 1930. So it is also known as "Swedish play" or "Speed play" (changes his/her pace. Himself/herself according to surrounding (Hills, River, Forest, Mud etc.)



This method helps in development of endurance of the sports person. Athlete changes his/her speed according. So it is self-disciplined in nature. The heart rate fluctuate between 140 - 180 beats/ minute Fartlek training involves varying our pace throughout our run. Alternating between fast and slow pace.

Q.2 Briefly explain the types of endurance.

or

“Endurance is one of the most important factor for high performance in games and sports” Explain

Ans.

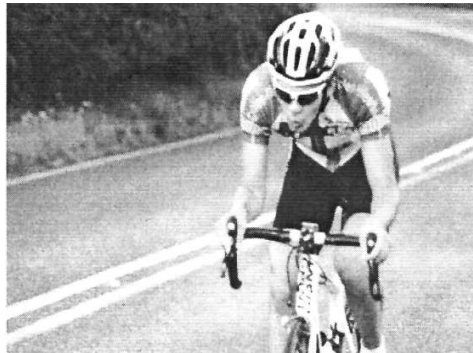
1. **Basic Endurance** :- It is the ability of an Individual to do the movement in which large no. of body and muscles involve at slow pace for a duration such as Walking, Jogging, Swimming at a moderate speed.
 2. **General Endurance** :- It is the ability of an individual to resist fatigue satisfactorily caused by different type of activities.
 3. **Specific Endurance** :- It is the ability of an individual to complete the task without any fatigue. It's requirement depends upon the nature of activity (Games and Sports) requirement of specific endurance of a boxer is different from that of a wrestler.
- **Speed Endurance** :- It is the ability of an individual to perform a movement with high speed to resist of fatigue in activities upto 45 seconds.
 - **In short term endurance** :- Short term endurance is needed to resist fatigue in sports activities lasting from 45 seconds to 2 minutes. Ex. 800 m race.
 - **The medium term endurance** :- It is the activity lasting from 2.min to 11 minutes. Ex. 1500 & 3000 mts.
 - **Long term Endurance** :- It is needed for those sports which require more than 11 minutes time ex. 5000m to 1000m cross

country race.

Long Answer Type Question (5 marks)

Q.1. Differentiate between the continuous method and interval method. Describe its advantages.

Ans. **1. Continuous Method :-** In continuous of method, the exercise is done for a long duration without taking rest. We do the exercise for a long duration. So the intensity of work is low. The heart rate during the exercise for a sportsman should be between 140-160 beats per minutes. For fast continuous method the heart rate of an athlete should be increased about 175 - 180. Min. Its duration of exercise should be more than 30 minutes. Ex. running walking, cycling, cross-country race etc.



Advantages :

1. Doing work continuously in spite of being tired strengthens the will to work.
2. According to this method increases the red blood cells in muscles.
3. In this method the working efficiency of heart and lungs get enhanced.

-
4. In this method Glycogen in muscles and liver gets increased.
 5. Player develop self discipline and self confidence. Apart from this their will power also gets enhanced.

2. **Interval Method :-** This method is very effective for developing endurance for track runners. Intervals are given to the athlete in between the repetition for recovery. The recovery period for athlete varies from person to person. The Heart should go up to 18 beat/ min. and when the heart rate comes down to 120-130 beats/ min again the repetition/ work starts. The training load should be given again after checking the heart rate of the athlete.

Ex. Middle distance race, foot ball, hockey etc.

Advantages :-

1. If an athlete perform these exercise in proper way then it will help to improve the working capacity in short time.
2. This method has a positive effect on both respiratory system and circulatory system.
3. The trainer can observe a player easily. The player in short time can enhance his endurance.
4. The player comes to learn about the effect of his training.
5. If the player mistake in executing the coach/ trainer can give him useful suggestion during recovery time. Thus, the players moral may be boosted.

Question (3 Marks)

- Q.1. What is Endurance? Explain its types?
- Q.2. Describe the types on endurance on the basis of time with suitable example.
- Q.3. Write down the method to develop endurance? Explain one of

them.

Q.4. Explain Fartlek method with its parameter?

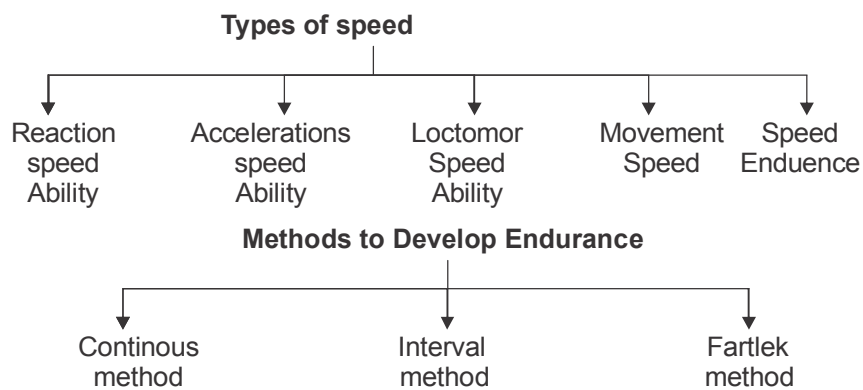
Question (5 Marks)

Q.1. What is Endurance? Enlist the methods to Develop endurance and explain any one of them in detail.

Q.2. Explain any two methods to develop the ability helps an individual to continue it activity under the condition of fatigue.

10.3 Speed

It is the ability to do movement as quick as possible.



Objective Types/MCQ (1 Marks)

Q.1. Which is not the type of speed ability

- (a) Reaction speed
- (b) Movement speed
- (c) Speed Enduence
- (d) **Speed Play**

Q.2. The ability which is helpful to Maintain max speed for long time.

- (a) Reaction speed
- (b) **Loctomotor speed**
- (c) Speed Endeurance
- (d) Movement speed

Short Answer Type Questions (3 Marks)

Q.1. Explain the types of speed Ability?

1. **Reaction speed ability:** It is the ability to act against a signal.
2. **Acceleration speed ability:** It is the ability to achieve max speed in minimum possible time.
3. **Movement speed ability :** It is the ability to do a single small movement in minimum possible time.
4. **Loctomor speed ability:** It is the ability to maintain max speed as long as possible.
5. **Speed Endeance:** It is the ability to do the movement as quick as possible under the condition of fatigue.

Long Answer Type Question (5 Marks)

Q.5. Differentiate between pace run and acceleration run.

Or

Explain about acceleration Run and pace run.

Or

Briefly explain the methods for improving speed.

Ans. **Pace run :** Pace run means running the whole distance with a constant speed. Generally 800 metre and above races are included in pace races. An athlete can run a distance of 300 metre. at full speed but in longer races such a 800 mtr. or above, he must conserve his energy by reducing the speed. Example-If there is a runner of 800m race. His best time is 1 minute 40 seconds. So he should run first 400 m in 49 seconds and next 400m in 51 seconds. This procedure is called pace race or pace run.

Acceleration Run : Acceleration run are usually used to develop speed indirectly by improving explosive strength,

technique, flexibility and movement frequency. It is the ability of a sprinter to achieve high speed from a stationary position. For direct improvement of acceleration speed a sprinter should do 25-30 mt. sprint of 6-12 times. The maximum speed should be achieved within 5-6 sec. Sufficient intervals should be provided between the repetitions.

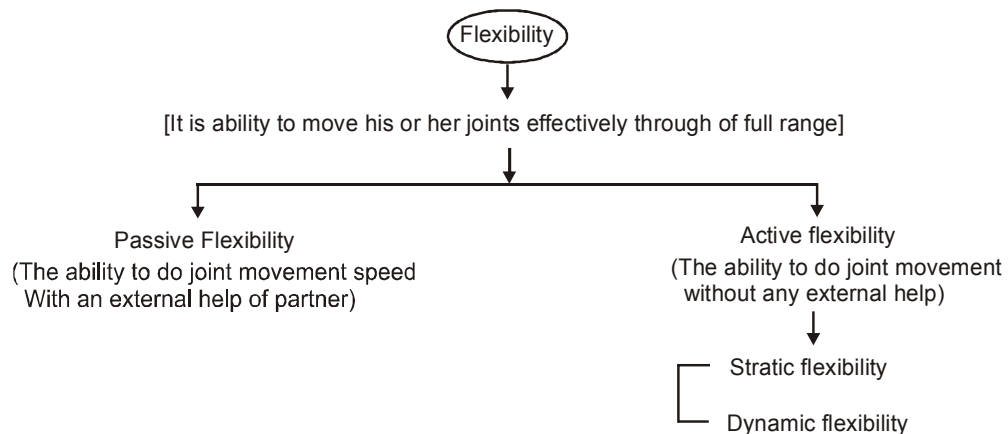
3 Marks Questions

- Q.1. Give one example of each type speed ability?
- Q.2. Define speed? Explain any one of speed ability in detail with examples.
- Q.3. Explain pace run method?
- Q.4. Explain Acceleration run method?

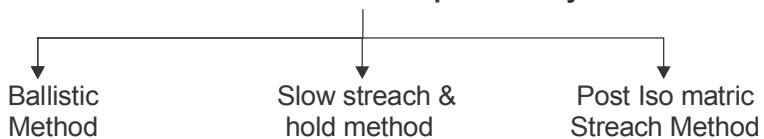
5 Marks Questions

- Q.1. What is speed? Discuss the methods to develop speed ability?
- Q.2. Discuss the types of speed? Explain any one method to develop speed?

10.4 Flexibility



Methods to Develop Flexibility



Objective Types/MCQ (1 Marks)

- Q.1. The ability which helps to the movement with greater range is known?
- (a) Endurance (b) Strength
(c) **Flexibility** (d) Speed
- Q.2. Which is not the method to improve flexibility?
- (a) Ballistic method
(b) Slow stretch and hold method
(c) Post Iso metric stretch method
(d) **Slow continuous method**
- Q.3. Which is the most latest method to improve flexibility?
- (a) Ballistic method
(b) Slow stretch & hold method
(c) Post Iso metric stretch method
(d) Iso tonic method

Short Answer type Questions (3 Marks)

Q.1. What do you mean by flexibility? Explain types of flexibility.

Or

What is the difference between active and passive Flexibility?

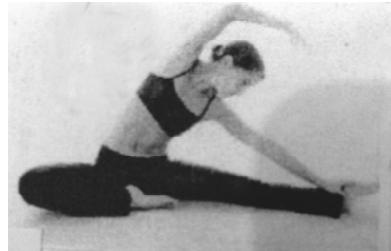
Ans. Flexibility is the range of movement of the joint of a sports person.

-
1. **Active flexibility** :- The ability of an individual to do the joint movement for a longer range without any external help. Active flexibility is less than passive flexibility. Ex. doing any stretching exercise without external help.

It is two kinds :-

- **Static Flexibility** :- It is usually required by a sports person when he remains in static position e.g. Diving, Sitting, Lying, etc.
- **Dynamic Flexibility** :- It is needed for walking and running its increase by static stretching.

2. **Passive Flexibility** :- The ability to do joint movement with a greater range with an external help of partner. This flexibility is largely determined by joint structure, stretch ability of the muscle and ligament. Passive flexibility helps in the development of active flexibility.



Long Answer type question (5 Marks)

Q.1. What are the methods to develop improve flexibility? Explain

Or

What is the difference between ballistic method and post Isometric method?

Ans. To maintain flexibility in games and sports stretching exercises should be done. By following methods, one can improve their flexibility.

-
- **Slow Stretch and hold method** - We stretch our joint to maximum limit and hold it for a few seconds before returning to the initial Phase. The holding period must be not more than 3 to 8 sec. The method is also use for improving passive flexibility.
 - **Ballistic Method** - In this method the stretching exercises are done in a swing, so this is called the ballistic method. A proper warm - up should be done before these exercise. Due to stretching of the muscle can be done in a rhythm.
 - **Post - Isometric Streach Method** - This method is based on the principle of proprio- Ceptive nuro- muscular facilitation means, If a muscle is contracted maximally for a few seconds, isometrically. It gives very low resistance to that Stretch. The duration of the stretch should be increased up to 8-10 second and repeated 4-8 times for each muscle group.

Question (3 Marks)

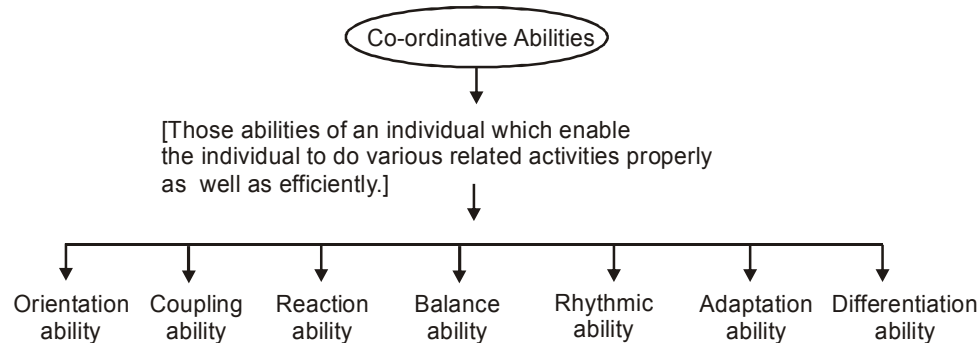
- Q.1. Define flexibility? Explain its types?
- Q.2. Discuss types of flexibility with examples?
- Q.3. Enlist the methods to develop flexibility & explain any one of them.
- Q.4. Discuss post Iso metric streach method.
- Q.5. Discuss Ballisitic method?
- Q.6. Discuss slow streach & hold method.

Question (5 Marks)

- Q.1. Define flexibility? Explain its type & one method to develop flexibility.

Q.2. Explain all the method to develop flexibility.

10.5. Co-ordinative Abilities



Objective Types MCQ

Q.1. Ability which help to change on the spot, predecided movement.

- (a) Diffrentation ability (b) Coupling ability
(c) Rhythm ability (d) **Adaptation ability**

Q.2. Ability help to make hormony among the different body parts & than related movements.

- (a) Reaction Ability (b) Adaptation ability
(c) **Diffrentation ability** (d) Balance ability

Short Answer type Question (3 Marks)

Q.1. Discuss Reaction Ability?

Ans. Reaction ability is the ability which help to react against an signal. These are two types.

- (a) Sempel Reaction ability. That ability help to react against the known signal.
(b) Complex Reaction ability: That ability which help to react against the known singal.

Example:

- Simple Reaction ability: Reaction of Batsman according to the coming Ball.
- Complex Reaction Ability: Do the aerobic exercise according to unknown music.

Long Answer Type Questions (5 Marks)

Q.1. What are co-ordinative abilities in sports? Entist the type of co-ordinative abilities. Explain any two them.

Ans. Co-ordinative abilities are those abilities which stabilized and generalized pattern of motor control. These abilities help the sportsman to do a group of movements with better quality and effect.

Co-ordinative abilities primarily depend upon the central nervous system. In sports, the co-ordinative abilities are following:-

1. Diffrentation ability
 2. Orientation ability
 3. Coupling ability
 4. Reaction ability
 5. Balance ability
 6. Rhythm ability
 7. Adaptation ability
- **Orientation ability** :- It is ability of a person to adjust himself as per the time and condition of place. This ability has Different importance in each game.

-
- **Coupling ability** :- It is the ability of a player to move his physical organs in order to do his activities. For example. Coordination between hands and eyes, feet and eyes etc.

Example in Volleyball the smasher smashes the ball according to the lift of the ball and blockers co-ordinating the movements of his hands head and feet.

Questions (3 Marks)

- Q.1. Discuss any three coordinative abilities with example.
- Q.2. What are coordinative ability?
- Q.3. Enlist all coordinative abilities? Explain any one of them with examples?

Questions (5 Marks)

- Q.1. What are coordinative abilities? How they are used in sports and games discuss?
- Q.2. Discuss all the types of coordinative abilities with example.

12.6 Interduction to circuit Training

Circuit training is a specific method of training which is used to develop physical fitness. In the circuit training all the exercises are performed in circuit without any break.

Rules for Circuit Training

- No of stations can be from 6 to 10
- Same exercise will not be repeated at two consecutive stations
- Same body parts will not be repeated at two consecutive stations
- Distance between two stations should be optimum

-
- Duration / repetitions should be according to the fitness level of an individual
 - Free hand exercise will be preferred for circuit training
 - No Recovery between 2 stations, 12 Min Recovery between Two circuits
 - In a training session maximum 3 circuits can be done.
 - Proper warmup should be done before participate in the circuit training
 - Movements should be done on each station with high speed.

Objective Types/McQ (1 Marks)

Q.1. How many no of stations for a circuit training is permitted

- (a) 3 – 5 (b) **6 – 10**
(c) 12 – 15 (d) 1 – 5

Q.2. Recovery time between two stations in circuit training will be

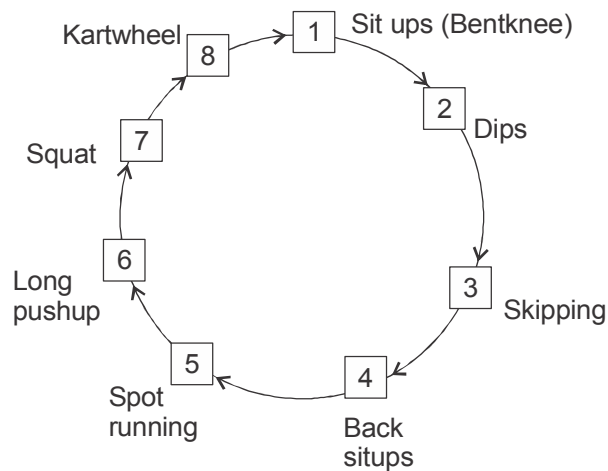
- (a) 3 sec (b) **Incomplete**
(c) 5 sec (d) 8 sec

Long Answer Type Questions (5 Marks)

Q.1. What is the circuit training? Make a diagram of circuit training for 8 stations. write two benefits of circuit training.

$$1 + 2 + 2 = 5$$

Ans. Circuit training: is a specific training used to develop physical fitness. In the circuit training all the exercises are performed in circuit without any recovery period.



Benefits of Circeit Training

- (1) Help to improve physical fitness
- (2) Help to improve cardio vascular fitness

Questions (3 Marks)

- Q.1. Make a diagram of circuit training for 6 station
- Q.2. Write any six benefits of circuit training
- Q.3. What do you understand by circuit training? Write any two rules for circuit training.

Questions (5 Marks)

- Q.1. What is circuit training? Explain its rules & benefits in detail.
- Q.2. Write down the characteristics & benefits of circuit training.

Miscellaneous Exercise

Objective Types / MCQ (1 Marks)

- Q.1. Match the following

(a) Explosive Strensth	(i) Endurance
(b) Continous method	(ii) To over come Resistance

with speed

(c) Post Isometric Stretch Method (iii) coordinative Abilities

(d) help to do movement effectively (iv) Flexibility

(a) a – iv, b – iii, c – ii, d – i

(b) a – ii, b – i, c – iii, d – iv

(c) a – ii, b – i, c – iv, d – iii

(d) a – i, b – ii, c – iv, d – iii,

Q.2.

(1 Marks)

(a) Isometric method (i) Heart rate 140 b/mt 180 b/m

(b) Farttek method (ii) Speed

(c) Circuit training (iii) Length of muscle remains same

(d) Pace Run method (iv) to exercise with out any break

(a) a – iv, b – iii, c – ii, d – i

(b) a – i, b – iii, c – ii, d – iv

(c) a – iii, b – i, c – ii, d – iv

(d) a – iii, b – i, c – iv, d – ii

Q.3. What is strength? Explain any one method to develop endurance 1 + 2 = 3

Q.4. What do you understand by flexihility explain the isometric method to develop stringth 1 + 2 = 3

Q.5. Define cordinative abilities? write any four inportance of circuit training? 1 + 2 = 3

-
- Q.6. What is locomotor speed? Explain post iso metric stretch method to develop flexibility. $1 + 2 = 3$
- Q.7. What is circuit training? Explain farttek training method. $1 + 2 = 3$
- Q.8. What is circuit training? Discuss the isotonic & Isokinetic method to develop strength training. $1 + 2 + 2 = 5$
- Q.9. Draw the diagram of circuit training for 6 stations? Explain any two coordinative abilities with suitable examples. $3 + 2 = 5$
- Q.10. Write short note on following.
- (a) Methods to develop endurance (any two)
 - (b) Methods to develop flexibility (any two) $2\frac{1}{2} \times 2 = 5$

PRACTICE QUESTION PAPER—1
PHYSICAL EDUCATION
XIIth

Time : 3 Hours

Max. Marks : 70

General Instructions

- Question paper contain 34 questions.
 - All questions are compulsory to be answered.
 - Question No. 1 to 20 carry 1 mark each. Write correct options on your answer sheet for each.
 - Question No. 21 to 30 carry 3 marks each. Answer to these questions should be in approximately 80-100 words each.
 - Question No. 31 to 34 carry 5 marks each. Answer to these question should be in approximately 150-200 words each.
-

1. Lordosis deformity is known as—
 - (a) lateral curvature of the spine
 - (b) Abnormal backward curvature of the shoulder bone
 - (c) Arch of sole of feet deminished
 - (d) Normal curvature of the lumber spine
2. Harvard step test is a test for measuring—
 - (a) Leg strength
 - (b) Cardio-vascular endurance
 - (c) Co-ordination
 - (d) Speed
3. Choose the correct Answer.
 1. Flexion (a) Angle increases between two bones
 2. Extension (b) Movement away from two middle of the body
 3. Abduction (c) Movement towards the centre of body.
 4. Adduction (d) angle decreases between the two bones

-
- (a) Determine status (b) Making defect
(c) Give warning (d) Unsolved problems

13. What is the formula used for Newton's second law of motion?

- (a) Velocity = acceleration \times time
(b) Force = Mass \times acceleration
(c) Momentum = mass \times volume
(d) Speed = distance/time

Or

Methods of speed development are

- (a) Continuous and interval
(b) Isometric & isotonic
(c) Fartlic and interval
(d) Acceleration Run & Race Run

14. Haemoglobin is found in—

- (a) WBC (b) Plasma
(c) RBC (d) Platelets

15. Which of the following is an eating disorder?

- (a) Kwashiorkor (b) Marasmus
(c) Anorexia Nervosa (d) Osteoporosis

16. Select the correct vitamin available in sun rays.

- (a) Vitamin D (b) Vitamin C
(c) Vitamin K (d) Vitamin A

17. Calculate the number of matches in a league tournament of 8 teams?

- (a) 18 (b) 28
(c) 38 (d) 48

Or

Benefits of Ardha-Matsyendrasana are—

- (a) Obesity & diabetes

-
- (b) Helps relieving pain in heck
- (c) Helps to improve the blood circular
- (d) Relaxes mind
18. Causes of disabilities are:
- (a) Herdity
- (b) Safe & clean environment
- (c) Balence diet
- (d) Water
19. The Rikli & John's Test in also known by--
- (a) Bane functional test
- (b) The senior citizen function test
- (c) Minimum muscular strength test
- (d) Cardio-vascular endurance
20. What are isotonic Exerises?
- (a) Exercises that are ignored fully
- (b) Exerises that decrease the working capacity of muscles
- (c) Exercises that increase the working capacity of musles
- (d) Exercises that are not visiable
21. Explain the fertlek training method? 3
22. Why is balanced diet important for spartspersons? (× 3
- Or
- Define motivation? Discuss about any two techniques of motivation?
23. Write the Newton's laws of motion, with suitable examples from sports. 1 × 3
24. Distinguish between intramurals & extramurals tournament. 1 × 3
25. Mention the causes & corrective measures of flat foot? 1½ + 1½

-
- Briefly discuss the causes of food intolerance? $1\frac{1}{2} + 1\frac{1}{2}$
26. Explain two types of motor development in children? $1 + 1 + 1$
27. What is the need for test in senior citizen? $1 + 1 + 1$

Or

Write the purpose of the Harvard step test?

28. Explain any three effects of exercises on the respiratory system.
 1×3
29. Explain the sheldon's type of personality. 1×3
30. Mention two symptoms of attention deficit hyperactivity disorder (ADHA). 1×3
31. Define endurance. Explain its types and briefly explain the methods of endurance development. $1 + 2 + 2$

Or

Mention all calculations & steps involved to draw a knock-out fixture of 21 teams. $1 + 1 + 1 + 2$

32. Which asanas are used to deal with hypertension? Explain in detail. 5
33. Discuss the advantages of physical activities for children with special needs? 5

Or

Explain various factors which usually leads to osteoporosis among women athletes. Explain its treatment. $3 + 2$

34. Contusion & dislocation are common sports injuries. Write in detail about the symptoms & management of these injuries. $2\frac{1}{2} + 2\frac{1}{2}$

PRACTICE QUESTION PAPER—2 PHYSICAL EDUCATION

Time : 3 Hours

Max. Marks : 70

General Instructions

- Question paper contain 34 questions.
 - All questions are compulsory to be answered.
 - Question No. 1 to 20 carry 1 mark each. Write correct options on your answer sheet for each.
 - Question No. 21 to 30 carry 3 marks each. Answer to these questions should be in approximately 80-100 words each.
 - Question No. 31 to 34 carry 5 marks each. Answer to these question should be in approximately 150-200 words each.
-

Section—A

Choose the correct answer

1. Name the type of movement in which the angle of joint decreases—
(a) Adduction (b) Abduction
(c) Flexion (d) Extension
2. Which newton's law of motion applied during take off in pole vault—
(a) law of inertia (b) Law of acceleration
(c) Law of reaction (d) Law of boygnce.
3. Which one of the category is not included in jung's classification of personality—
(a) Introvect (b) Extrovert
(c) Ambivert (d) Extroverb

Or

Which on of the big five traits of personality is not in its domain—

- (a) Newotiasm (b) Agreeableness
(c) Extraversion (d) consciousness

-
4. In which disease causing difficulty in breathing—
(a) Obesity (b) Asthama
(c) Diabeties (d) Back pain
5. Flat feet is also know as———
(a) Planter planes (b) Per planus
(c) Motor newton (d) metamorphic
6. How many byes will be given if 17 team are in a knockout tomnament—
(a) 15 (b) 14
(c) 16 (d) 17
7. “Kyphosis” is also called———
(a) Hollow back (b) Round back
(c) Lateral back (d) Back larks

Or

- The team rest and motion are studied under—
(a) Biochemistry (b) Anatomy
(c) Biomechanics (d) Botony
8. Behaviour carried out with the intention of harming another person in called
(a) Stress (b) Tension
(c) Aggression (d) Exitment
9. In which disorder person repeated action—
(a) SPD (b) ODD
(c) OCD (d) ASD
10. Which training method in swedish means speed play—
(a) Fertlek (b) Interval
(c) Circuit (d) LSD

11. Which vitamin is easily destroyed by heat and air

- (a) K (b) C
(c) D (d) K

Or

Which of the following is the richest source of vitamin 'C'—

- (a) Banana (b) Apple
(c) Guava (d) Tomato

12. For cross country runners the diet should rich in——

- (a) Protein (b) Fat
(c) Minerals (d) Carbohydrates

13. Which test is used to measure flexibility—

- (a) Sit and reach (b) 50m standing start
(c) 600m run (d) Partial curlup

14. Which test is used to measure agility—

- (a) Broad jump (b) zig-zag race
(c) Medicine ball throw (d) Push-up

15. A deep cut or tear in skin or flesh is called——

- (a) Laceration (b) Sprain
(c) Abrasion (d) Contusion

16. The aid which we give before the doctor arrive is termed as—

- (a) First-aid (b) Aid-first
(c) first-aid (d) First-aid

Or

Weight of medicine ball for girl in barrow test is——

- (a) 0-5 kg (b) 1 kg
(c) 1.5 kg (d) 2 kg

-
17. Kness that bend towards each other in–
- (a) Bow-leg (b) fat-feet
(c) Knock-kness (d) locked kness
18. To cover a given distance in minimum time in called
- (a) Strength (b) Speed
(c) flexibility (d) Endurance
19. Match the following diseas with related cause.
- | | |
|-----------------|--------------------------|
| 1. Diabets | (a) Accumulaction of fat |
| 2. Hypertension | (b) Insuline |
| 3. Asthma | (c) Blood presure |
| 4. Obsity | (d) Respriratory poets. |
| (a) b,c,d,a | (b) a,b,c,d |
| (c) d,c,b,a | (d) c,d,a,b |
20. Match the following units with their personality
- | | |
|-----------------|-----------------------------|
| 1. Extrouession | (a) Insightful & Imaginasy |
| 2. Agreebleuess | (b) Talkatime |
| 3. Neuroticism | (c) Friedly and cooperatine |
| 4. Opeuness | (d) Euatiovally stable |
| (a) b,c,d,a | (b) c,d,a,b |
| (c) a,b,c,d | (d) c,d,b,a |

Section–B

21. Define first aid. Write any two joint injusies that may occurs in sports. 1 + 2 = 3
22. Define endurance. Write any two methods to develop endurance. 1 + 2

Or

Write the methods to develop speed in brief.

-
23. How are the following tests carried out 1 × 3
(a) 8 foot up and go (b) Chair sit and reach
(c) Back scratch
24. Enlist any two postural deformities. Write preventive measure and symptoms of knock-knee 1 + ½ × 2 + ½ × 2 = 3

Or

Mention the cause and corrective measures of flate foot. $1\frac{1}{2} + 1\frac{1}{2} = 3$

25. Describe the types of disability and explain the cause and nature of any one disability. 1 + 2 = 3
26. Explain newton's second law of motion. Elaborate flexion and extension movment by giving examples from sports. $1 + 1 + 1 = 3$
27. Enlist lifestyle related discases. Write the method of vajra asana and vakra asana. 1 + 1 + 1 = 3
28. Explain motivation and elucidate any two techniques of it. $1 + 2 = 3$

Or

Explain any three effect of exercises on respiratory system. 1 × 3 = 3

29. Describe specifie sports programme. Write a short note on sports day organised in your school. 1 + 2 = 3
30. Define balanced diet. Describe any two micro-nutrients and its impotence. 1 + 2 = 3

Section–C

31. Elaborate circuit training. Write explosive strength and fartlek training in detail. 1 + 2 + 2 = 5

Or

Define strength. Write its types and methods to improve strength 1 + 1 + 3 = 5

-
32. Diabetes and obesity are the most common disease of modern era. Write the procedure, benefits and contraindications for any one asama for each disease. $2\frac{1}{2} + 2\frac{1}{2} = 5$
33. Define exercise adherence. Write any four health related benefits of exercise. $1 + 4 = 5$
34. Define knock-out tournament. Prepare a fixture of 19 teams based on knock-out tournament. $1 + 4 = 5$

Or

Sprain and strain are common sports injuries. Write in detail about the symptoms & management of these injuries.

$2\frac{1}{2} + 2\frac{1}{2} = 5$

SOLVED QUESTION PAPER-1

PHYSICAL EDUCATION

Time : 3 Hours

Max. Marks : 70

General Instructions

- Question paper contain 34 questions.
 - All questions are compulsory to be answered.
 - Question No. 1 to 20 carry 1 mark each. Write correct options on your answer sheet for each.
 - Question No. 21 to 30 carry 3 marks each. Answer to these questions should be in approximately 80-100 words each.
 - Question No. 31 to 34 carry 5 marks each. Answer to these question should be in approximately 150-200 words each.
-

Section-A

1. Full form of SPD is 1
- (a) Sensory personal disorder
 - (b) Sensory persona disorder
 - (c) Sensory processing disorder
 - (d) Sensory problem disorder.
- Ans. (c)
2. It is the ability to resist the fatigue means— 1
- (a) Endurance
 - (b) Speed
 - (c) Strength
 - (d) Flexibility
- Ans. (a)
3. Hair line fracture is also know as— 1
- (a) Transverse
 - (b) Green stick
 - (c) Stress
 - (d) Objique
- Ans. (D)

-
4. Introvert personality always focuss on— 1
(a) Society (b) Themselves
(c) Others (d) Friends

Ans. (b)

5. If the total no. of teams is 29, on the basis of knock out, byes will be— 1
(a) 2 (b) 4
(c) 1 (d) 3

Ans. (d)

Or

- In a contraction, if the length of muscles changes is called. 1
(a) Isometric (b) Isotonic
(c) Isokinetic (d) Fasttles

Ans. (b)

6. The word 'ECTO' in ectomorphy is know for— 1
(a) Fat (b) Thin
(c) Muscular (d) Round shape

Ans. (b)

7. All the following are macro nutrients except— 1
(a) Carbohydrates (b) Proteins
(c) Fats (d) Vitamin.

Ans. (d)

Or

- A Normal range of BMI is— 1
(a) 18 to 25 (b) 16 to 24
(c) 19 to 25 (d) 25 to 30

Ans. (a)

8. Match the following with correct options. 1

- | | |
|--------------------------|----------------------------------|
| 1. 600mt Run | (a) General motor fitness test |
| 2. zig-zag run | (b) Rikli and jones test |
| 3. Handward step test | (c) Motor fitness test |
| 4. Six minutes walk test | (d) Cardio vascular fitness test |

- | | |
|-------------|-------------|
| (a) d,c,b,a | (b) c,a,d,b |
| (c) a,d,b,c | (d) d,b,a,c |

Ans. (b)

Or

Match the following with correct options–

- | | |
|---------------------------------|----------------------------------|
| 1. Motor fitness test | (a) Chair stand test |
| 2. Rikli and jones test | (b) Computation of fitness index |
| 3. General motor fitness test | (c) standing broad jump |
| 4. Cardio vascular fitness test | (d) 4 × 10m shuttle run |

- | | |
|-------------|-------------|
| (a) c,b,a,d | (b) b,a,d,c |
| (c) d,a,c,b | (d) b,a,d,c |

Ans. (c)

9. Match the following with correct options. 1

- | | |
|---------------------|------------------------------------|
| 1. Food intolerance | (a) To loss body weight |
| 2. Food myths | (b) Vomiting |
| 3. Dieting | (c) Healthy weight |
| 4. Bini 24 | (d) Do not drink water during meal |

- | | |
|-------------|-------------|
| (a) d,a,b,c | (b) b,d,a,c |
| (c) b,a,d,c | (d) d,a,c,b |

Ans. (b)

10. Following are the cause of sports injuries except— 1
(a) Inadequate warmingup (b) Lack of sport facilities
(c) Practice under fatigue (d) Proper knowledge of skill

Ans. (d)

11. Following are the examples of fracture, except— 1
(a) Stress fracture (b) Oblique
(c) Abrasion (d) Communicated

Ans. (c)

Or

Back-pain disease is related to— 1
(a) Pancreas (b) Spinal cord
(c) Heart (d) Respiratory tracts

Ans. (b)

12. The age between 13-19 is known as— 1
(a) Childhood (b) Adulthood
(c) Puberty (d) Adolescence

Ans. (d)

13. During adduction movement of the arm moves towards 1
(a) The body (b) Away from body
(c) Upward side (d) downward side

Ans. (a)

14. Newton's first law of motion is also called— 1
(a) Law of inertia (b) Law of acceleration
(c) Law of Reaction (d) Law of gravitational

Ans. (a)

15. The study of living being in rest & motion is known as— 1
(a) Biochemistry (b) Anatomy
(c) Biomechanics (d) Psychology

Ans. (c)

16. In a tournament, when a team play with every team is called

- (a) League (b) Knock-out
(c) Knock-out league (d) League cum knockout

Ans. (a)

17. Which asana is practised for back pain 1

- (a) Trikonasan (b) Paschimotanasana
(c) Chakrasana (d) Shalabasana

Ans. (d)

18. Full form of ADHD is——— 1

- (a) Attention deficit hyperactive disorder
(b) Automatie defiat hyperactive disorder
(c) Attention deflection hyperactive disorder
(d) Attention deticit hyperactive disease

Ans. (a)

19. The arch of foot is related to which postural deformity— 1

- (a) Flat foot (b) Lordosis
(c) Kyphosis (d) Scolosis

Ans. (a)

20. When your spinal has a lateral curve is know as— 1

- (a) Scolosis (b) Kyphosis
(c) Lordosis (d) Flat foot

Ans. (a)

Section–B

21. Explain the procedure of shalab-asana and ardha-matsyendra
- asana. $1\frac{1}{2} + 1\frac{1}{2} = 3$

Ans. **Shalabhasana–**

- Lie down on your stomach.

-
- Place your palm under your thighs, keep ankles close to one another.
 - Breathe in and lift your legs upwards, while doing so your chin should rest on the ground.
 - Hold this position for sometime after that exhale and take down your legs in initial position.
 - Repeat this for 3 to 5 times.

Ardhamatsyendrasana–

- Sit and keep both legs straight.
- Bending the knee of right feet and put right heel below the left hip.
- Bend left leg and place the left feet to the right side of the right knee.
- Keep right knee closed to the chest.
- Exhale from the right nostril and turn towards the left, and touch the toe of left leg from the right hand.
- Body and head moves toward the left.
- Repeat while changing the position of legs.

22. Elucidate the term “Exercise Adherence”. Write any two reasons to do exercise. 1 + 2 = 3

Ans. Exercise adherence refers to maintaining a systematic approach to exercise for a prolonged period of time following the initial adoption.

Reasons to exercise–

- (i) **To Perform daily Tasks Efficiently–** Exercise not only helps to maintain or develop physical fitness of an individual but also helps to develop self-esteem, perception, relaxation, reduce frustration, etc which helps him/her to perform daily task efficiently.
- (ii) **To Improve Working Efficiency of all organs–** Through participation in exercise programme, individual learn about

body and its functional value in daily life. Exercise help to maintain or increase the efficiency of all organs of the body which helps the individual to lead a happy life.

23. What are the advantages and disadvantages of league or round robin tournament? $1\frac{1}{2} + 1\frac{1}{2} = 3$

Ans. **Merits-**

- (i) only real player/team that has best potential will be the winner of the team.
- (ii) Charm of the tournament still maintained through out the tournament.
- (ii) Good team/player will continue through out the tournament so the chances of selection of good players is still alive.

Demerits-

- (i) More funds are required
- (ii) More time/excess time is required
- (iii) Result come late.
- (iv) Requirement of more no. of officials and more no of grounds
- (v) Equipments are needed more.

24. Explain the role of any two macro nutrients in our diet. $1\frac{1}{2} + 1\frac{1}{2} = 3$

Ans. **Carbohydrates-**

- (i) Act as major fuel for muscular contraction
- (ii) It provides the energy to our body
- (iii) It helps to maintain body weight and body temperature.
- (iv) Important for different digestive operations in our body.

Fats

- (i) It provides heat and energy to the body
- (ii) It protects the body from cold and heat climate

-
- (iii) Helps in regulation of body temperature
 - (iv) It also helps to protect internal organs of the body.

25. Explain any three strategies to make physical activities accessible for children with special needs. 1 × 3 = 3

- Ans. 1. **Interest**– Selected physical activities can be accessible if it is according to the interest of the person having disability.
2. **Capability**– The selected physical activities must be according to the capability of the person with disability
3. **Modified equipments**– As per the capability of the person with disability equipment must be modified so they can be used easily.

Or

Write down the causes & corrective measures of bow legs.

Causes

- Enlargement of lateral ligament of both knee quickly as compared to medial ligament.
- Weakness of bones and muscles.
- Long time cross leg sitting
- Faulty style of walking
- Obesity
- Rickets
- Early age standing

Corrective measures

- Walking
- Use of walking callipers
- Massage therapy
- Use those exercises which strengthen the muscles surrounding the knee such as leg extension in lying position.

-
- Use yoga strap to bind the legs together then make cow face posture forward bending are recommended.
 - Pilate exercise such as roll up ballerina arms are effective to tone legs.
 - Garud asana, ardh matsyendrasana.

26. Describe motor fitness test. write the procedure for agility and explosive power of leg of motor fitness test. $1 + 1 + 1 = 3$

Ans. Motor fitness refers to the capability of an athlete to take part effectively in his/her particular sport

To measure agility–

- Make two parallel lines three meters in length, 10 meters apart using making tap or cone.
- The subject stands at starting line or point. the two wooden block are placed in the edge of the other line.
- On the signal 'go' the subject runs to the wooden block, lift one block places the block behind the live.
- Then the subject return to the second block lift it and then runs across the starting line on the way back.
- Two trials are given.

Explosive power of legs

- A take of line is marked on the ground. subject inches stands just behind the take off line with the feet several inches apart. The subject runnings the arm and bends the knees to take a jump in the long jump pit.
- Three trials are given to the subject.
- The distance is measured from the take-off line to the heel or other part of the body that touches the ground nearest to the take-off line
- All jumps are measured and the best one is recorded.

OR

Describe fartlek training method.

3

Ans. It is another method to develop the endurance ability. This method was developed by Swedish coach "Gosta Holmer" in 1930. So it is also known as 'Swedish play' or 'speed play'/changes his/her pace himself/herself according to surrounding.

This method helps in development of strength and endurance of the sports person. Athlete changes his/her speed accordingly.

So it is self-disciplined in nature.

The heart rate fluctuates between 140-180 beats/min. Fartlek training involves varying our pace throughout our run.

27. Explain the methods of improving strength by giving appropriate examples. $1 \times 3 = 3$

Ans. **Isotonic exercise**— the exercise in which muscular effect results in movement. Eg— Push ups, situps, climbing stairs.

Isometric exercise— exercise in which muscular tension is developed without any visible movement of muscles.

eg— Pressing against a wall, Balancing on one foot.

Isokinetic exercise— This exercise is done with the help of machines

eg— Running on treadmill, Butterfly exercise.

28. Enlist the soft tissue injuries write the types of sprain. $1 + 2 = 3$

Ans. Soft tissue injuries— sprain, strain, contusion, abrasion, incision, laceration,

Sprain— Sprain is a soft tissue injury which occurred in the ligament of a joint.

1st degree sprain— Over stretching of ligament, slight pain
recovery in 1 day

2nd degree sprain— Partial tear of ligament, swelling & pain.
Recovery in 1-2 weeks

3rd degree sprain– Rupture of ligaments, more swelling and pain, Recovery in 1 month.

Or (any two)

Write any six benefits of exercise

6 × ½ = 3

- Ans. 1. Prevention from major disease like coronary heart disease, diabetes etc.
2. To improve personality
 3. It helps to improve working efficiency of all organs.
 4. It helps to improve physical and health related fitness.
 5. It helps to improve group behaviour attention and concentration.
 6. It helps to develop good habit, discipline, dedication and determination.

29. Write the effect of exercise in muscular system. 1 × 3 = 3

- Ans. 1. **Muscular hypertrophy**– Due to regular exercise a good growth in size of muscles.
2. **Capillarisation**– Increase the number of capillaries due to regular exercise and the colour will be dark red.
 3. **Control Extra fat**– Regular exercise delays the extra fat of body. Exercise burn the extra calories.
 4. **Delay fatigue**– Regular exercise delays fatigue. This fatigue is mainly due to formation of CO₂, lactic acid and acid phosphate.
 5. **Posture**– Regular exercise helps in improving posture by improving postural deformities.
 6. **Strength and speed**– Regular exercise improve the strength and speed muscle cells.
 7. **Increase food storage**– The food storage capacity is increased when regular exercise are done.

(Any three)

30. What is friction? Discuss various types of friction you come across in sports. 1 + 2 = 3

Ans. Friction is the force that combats relative motion between the two surfaces that comes in contact.

Friction always acts in the opposite direction of the applied force.

Types of friction:

- (i) **Static friction**– The opposite force that comes into when our body is actually not moving over the surface of another body.
- (ii) **Dynamic friction**– Dynamic friction is of two types.
 - (a) **Rolling friction**– The opposing force that comes into play when body is actually rolling over the surface of another body.
 - (b) **Sliding friction**– The opposing force that comes into play when one body is actually sliding over the surface of the other body. eg– Ice skating.

Section–C

31. Define balanced diet. Enlist the macro and micro nutrients, and briefly explain the importance of carbohydrate. 1+1+1+2=5

Ans. The diet that contains all the component of food i.e, proteins, carbohydrates, fat, vitamins, minerals, fibres and water in optimum amount, is called a balanced diet.

Macro-nutrients– Carbohydrates

Proteins

Fats

water

(Any Two)

Micronutrients – Vitamins

Minerals

Carbohydrates– They are main source of energy for all activities.

they give quick energy and lack of carbohydrates in diet causes under nutrition and weight loss.

Excess amount has been stored in liver and tissues from there release the energy when in need.

32. Describe asanas and write asana as a preventive measure for lifestyle diseases. 1 + 4 = 5

Ans. Asana means different body postures to strengthen physically and mentally. Patanjali says “Sthiram sukham Asanam”.

Asana as a preventive measure for Lifestyle diseases–

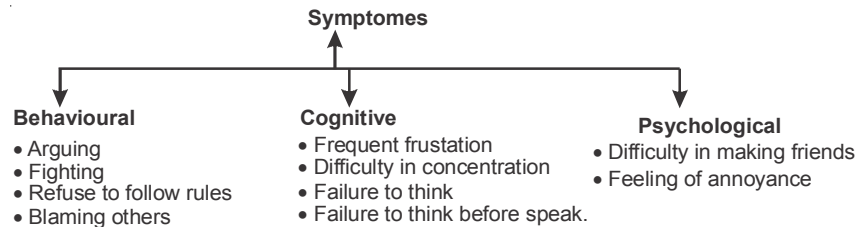
- (i) Brings firmness & flexibility in the body.
- (ii) Have good effect on 24 hrs. working organs like nerves, glandes, muscles.
- (iii) Overall development of body.
- (iv) Develop tollerance & self confidence
- (v) Positive thoughts will come in mind.
- (vi) Body becomes disease free
- (vii) Relief from aniety

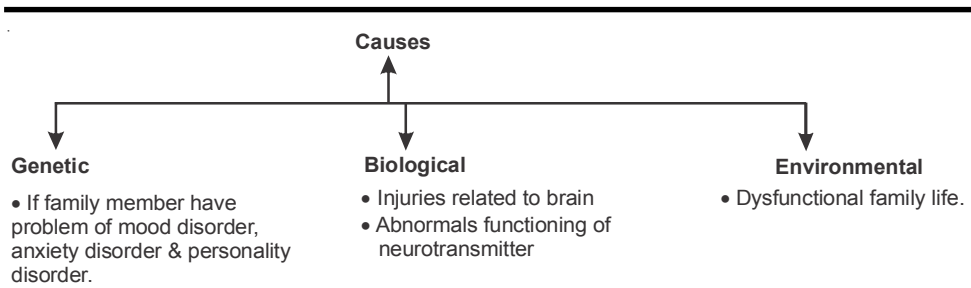
(Explain any 4.)

33. Define ODD. Breifly explain the symptoms & causes of ODD.

1 + 2 + 2 = 5

Ans. ODD (oppositional defiant disorder) is a group of behavioural disorders called disruptive behaviours disorder. In this disorder effected person always try to disrupt those around them.





(Explain in detail)

Or

Elucidate the steps to improve the participation of women in games and sports. 1 × 5 = 5

Ans. The steps to improve women participation in the field of games and sports

- (1) Motivation and inspiration to women for participation.
- (2) Support from family and parents.
- (3) To organize camps, seminar and workshops.
- (4) To provide knowledge and media coverage.
- (5) Educating women at grass root level and participation.
- (6) Providing better infrastructure and facility.
- (7) Ensuring safety and security of women.
- (8) to build physical and psychological strength.
- (9) Develop new techniques & environment.
- (10) Better incentives and awards.

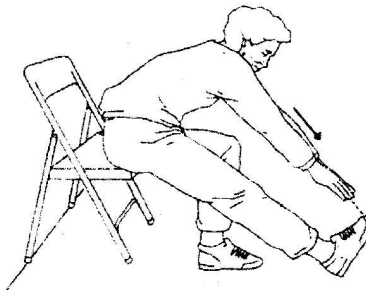
34. Discuss chair sit and reach test briefly. 5

Ans. Chair sit and reach test :

Daily Benefit: Lower body flexibility is important for preventing lower back pain. It also plays a role in balance, posture, in fall prevention, or walking. Lower body flexibility is important for maintaining an active and independent lifestyle.

Purpose: This test measures lower body flexibility.

Equipment required: Ruler, straight back or folding chair, (about 17 inches/44 cm high)



Procedure:

- The subject sit on the edge a chair (placed against a wall for safety).
- One foot must remain flat on the floor. The other leg is extended forward with the knee straight, heel on the floor, and ankle bent at 90°.
- Place one hand on top of the other with tips of the middle fingers even. Instruct the subject to inhale, and then as they exhale, reach forward toward the toes by bending at the hip.
- Keep the back straight and head up. Avoid bouncing or quick movements, and never stretch to the point of pain. Keep the knee straight, and hold the reach for two seconds.
- The distance is measured between the tip of the fingertips and the toes.
- If the fingertips touch the toes then the score is zero. If they do not touch, measure the distance between the fingers and the toes (a negative score). If they overlap, measure by how much (a positive score).
- Perform two trials

Or

Draw the fixture for 24 team on the basis knock out tournament. 5

Ans. Total no. matches = Total no. of team-1 = 24-1 = 23.

Total no. round = $2 \times 2 \times 2 \times 2 \times 2$

i.e. Digit 2 report 5 times

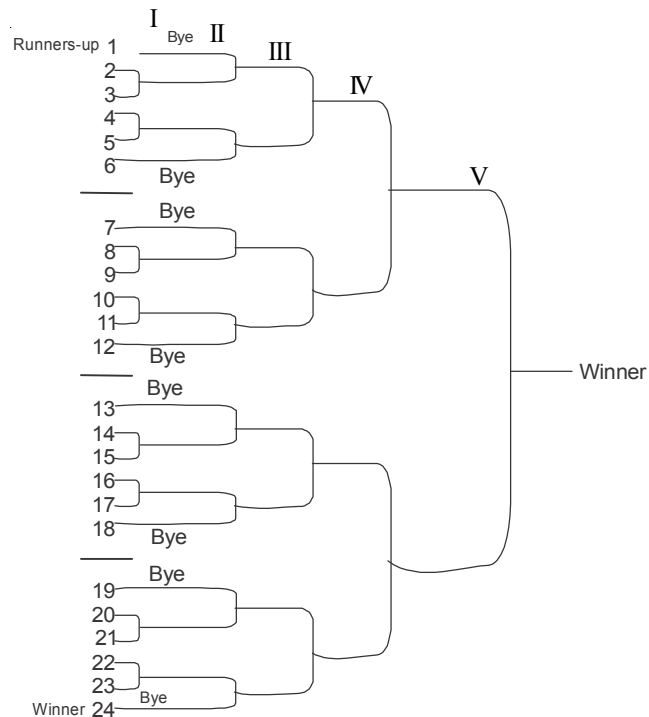
So total no round = 5 round

Total team in upper half = Total no. of teams = $\frac{24}{2} = 12$ teams

Total team in lower half = Total no. of teams = $\frac{24}{2} = 12$ teams

As the total no of teams are more then 16 so we have to divide teams also in quarter.

Teams in each quarter : $24 \div 4 = 6$



SOLVED QUESTION PAPER-2

ENGLISH

Time : 3 Hours

Max. Marks : 70

General Instructions

- Question paper contain 34 questions.
 - All questions are compulsory.
 - Question No. 1 to 20 carry / mark each. Write correct options on your answer sheet for each.
 - Question No. 21 to 30 carry 3 marks each. Answer to these questions should be in approximatly 80-100 words each.
 - Question No. 31 to 34 carry 5 marks each. Answer to these question should be in approximatly 150-200 words each.
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Multiple Choose Question–1 Marks

1. Disability is developed by–

- (a) Genetic (b) Balance diet
(c) Injury (d) 'a' & 'c' both

2. To draw fixtures method is not a mehtod of league tournamenl

- (a) Cyclic mehtod (b) **Knock out mehtod**
(c) Stair case method (d) Tabular mehtod

Or

If no. of team are 19 in knock out turmament no. of matches.

- (a) 171 (b) **18**
(c) 19 (d) 20

3. Source of fat is:

- (a) Meat (b) **Butter**
(c) Vegetables (d) Cerales

4. Anorexia nervosa an – – – – – disorder

- (a) **Eating** (b) Mental
(c) Physical (d) Intellectual

Or

Menarche is – – – – – menstrual cycle / bleeding

- (a) Cast (b) Regular
(c) **First** (d) Prregualr
5. In speed the most important factor is the?
(a) Leg power (b) Arm power
(c) Length of leg (d) Type of muscler fibers.
6. When child is not able to adjust within society or having no friends is suffer from–
(a) **ADHD** (b) ASD
(c) ODD (d) OCD
7. Which one of the following is responsible for Aerobic Actirites.
(a) Carbon-di-oxide (b) Hydrogen
(c) **Oxygen** (d) Helium
8. Incision is the injung of–
(a) Hard tissue (b) **Soft tissue**
(c) Joints tissue (d) Bone tissues
9. First step in sports tournament is –
(a) **Planning** (b) commitees
(c) Oranifise (d) Coordination
10. Fartlek training is used to develop –
(a) Strangth (b) **Endurance**
(c) Speed (d) Flexibility
11. Vitamin 'A' is – – – – – Vitamin
(a) **Water soluble** (b) Fat soluble
(c) both of (a) & (b) (d) Insoluble

Or

BMI is to measure

- (a) **Body healthy weight**
- (b) Body strength
- (c) Body fat component
- (d) Body endurance
12. Ardha. Matytsyendrasasanana, paschimotanasana are help pul in curing –
- (a) Asthma (b) **Diabetes**
- (c) Cancer (d) Anoxexia nenosa
13. When the ability of a person to work gradually decreases the that condition is called
- (a) Childhood (b) Adolescence
- (c) Adulthood (d) Ageing
14. 50 mts standing start race is used to determine –
- (a) Co-coordination of body
- (b) Endurance
- (c) **Acceleration and speed**
- (d) Flexibility & Agility

Or

Harvard step test is used to measure

- (a) **Cardio-vascular fitness**
- (b) Upper body flexibility
- (c) Lower strength
- (d) Co-ordination & Agility fitness
15. Formula of B.M.I –
- (a) $\frac{\text{Height}}{(\text{Weight})^2}$ (b) $\frac{(\text{weight})}{(\text{Height})^2} \times 100$
- (c) $\frac{(\text{weight})}{(\text{Height})^2}$ (d) $\frac{\text{Height}}{(\text{Weight})^2} \times 100$

-
16. Lifting arm sideway is an movement of –
- (a) Flexion (b) Extension
(c) **Abduction** (d) Adduction
17. Intrinsic motivation Include:
- (a) Award (b) Punishment
(c) Praise (d) Both of (a) & (c)
18. The sit and reach test is conduted to assess which parametere–
- (a) Strength (b) Endurance
(c) **Flexibility** (d) BMI
19. Goal of sports training is.
- (a) **Improvement of physical fitness**
(b) Improvement of body weigth
(c) Improvement of body size
(d) Gaining of top form in the society
20. Newton second law of motion is also called –
- (a) Law of interaction (b) Lay of inertia
(c) Low of gravity (d) **Law of acceleration**
21. Define the first aid? How will you manage joint enjunes?
 $1 + \frac{1}{2} \times 4$
22. What are the benefits of physical activities for children with special needs?
 $\frac{1}{2} \times 6$
- Or
- Explain SPD? Write its charcteristics & causes?
 $1 + \frac{1}{2} \times + \frac{1}{2} + 2$
23. How is friction advantageous anddisadvantagedis in the field of games and sports? Explainn wite examples.
 $1\frac{1}{2} + 1\frac{1}{2}$
24. Brifly explain the procedure of any 2 asanas to manage asthma.
 $1\frac{1}{2} + 1\frac{1}{2}$
25. Write briefly about minerals as an important nutritive componet.
 1×3
- Or
- Explain non-nutritive components of diet.

-
26. Define "Flexibility". Discuss the methods for developing flexibility?
1 + 2
27. Enlist committees duties before the competition. $\frac{1}{2} \times 6 = 3$
28. What are the reasons for irregularity in menstruation? $\frac{1}{2} \times 6 = 3$
29. Differentiate between internal & external motivation

Or

Explain two strategies for enhancing exersies?

30. Define "circuit training". Discuss the advantage of circuit training?
1 + $\frac{1}{2} \times 4$
31. Classify sports injuries? Explain 'PRICE' procedure as treatment of soft tissue injuries.
3 + 2

Or

Describe two immediate effects of exerises on the cardio vasucular system.
1 × 5

32. Elucidate big 5 theries of personality.
1 × 5
33. Explain any five Rikly & Jones test to measure the functrional fitness of senior citizen.
1 × 5

Or

Write two suggestion to promote participatiow of women in sports.

34. On knock out basis, draw a fixture of 23 teams.

SECTION A

Ans 21. First aid– "First aid is the first help which is given to the injured /wounded accident/ accideul victim before the arrival of the doctor.

Management of joint Injuries

- | | |
|------------------|-----------------------------------|
| (i) Rest Therapy | (ii) Price Therapy |
| R – Rest | P – Project the wound |
| E – Elevate | R – Rest – No more movement |
| S – support | I – Ice– To stop the bleeding |
| T – Tight | C – compression – To stop bleddin |
| | E – Elevation – Heart level. |

Ans 22. Q. Explain the advantages of physical activities for children with special needs.

Ans. **(1) Physical improvement:** Improvement in concentration.

- * Improvement in flexibility
- * Improvement in strength
- * Improvement in endurance
- * Improvement in cardiovascular efficiency
- * Decrease the Risk of obesity
- * Better over all fitness.
- * Improvement in Motor ability
- * Minimize joint swelling.

(2) Mental improvement

- * Improvement in mood
- * Improvement in wellness
- * Improvement the working of nervous system.
- * Brain release endorphins that help to feel good and ease from depression anxiety.

(3) Improved the sense of self esteem

- * feeling of greater self efficiency

(4) Sociological Gains

- * New experiences
- * New friendship
- * feel of independence
- * countering of stigmatization

(5) Good health

- * Low risk of disease

(6) Enhance Productivity

- * Improve the working efficiency

Or

Ans 22. SPD –sensory processing disorder, In this disorder effected person has problems in his nervous system to receive the information that comes through the sensory organs.

A Characteristics of SPD.

- (a) **Behavioural symptoms:** Oversensitive towards the sound, oversensitivity towards the odours, effected person do not engage in creative play, difficult to calm after getting upset.
- (b) **Physical symptoms:** Poor Balance, poor posture, fine motor control is always delayed, poor hand writing, motor development takes more time, excessive spin in the body parts, poor coordination, impairment in sleep.
- (c) **Psychological Symptoms:** Social isolation depressed, Anxiety, Aggression, feel fear from crowd, feel fear from surprise touch.

B Cusees of SPD:

- (1) **Genetic components:** Some of genetic components which we get from our parents such as hypersensitivity to light & sound may leads towards SPD.
- (2) **Abnormal Brain structure:** Due to any cause if the structure of brain is not proper it may becaused SPD.
- (3) **Injuries:** at upper neck and Brain stem region may effect the working of nervous system and leads towards SPD.
- (4) **Environmental factors:** Children who have been exposed to a variety of environmental toxins like lead, mercury, poly-vinyl chloride etc. are at higher risks.
- (5) **Environmental addiction:** If mother was a drug addict during fatal derelopment the child has a higher risk of suffering from SPD.

Ans 23. Friction is usually called necessary evil. It means it is essential in the life and we can not do any work without it.

Advantages of friction

- (a) Keeps the object at position by friction, the objects can be placed

Disadvantage of friction

- (b) Wear and tear of object:
Due to friction, there is wear and tear of objects.

-
- | | |
|---|---|
| position and shaped. | Lubrication is used to allow the parts to move easier, moreover, prevents wear and tear. |
| (b) Helps to move: Frictional forces helps to move the object by friction. It helps in running, walking. with friction of feet/ shoes on the surface, helps to speed. Frictional force helps to move the object in the speed. For example: Spikes are used by the athletes to run fast. | (b) Wastage of Energy: Excess of friction means extra energy, thus energy is being wasted. |
| (c) Hold or grip an object: with the help of friction the ridges of skin of our fingers and our palm enable us to grab and hold objects. For example– In badminton the players use grip to hold it. | (c) Slow down the Speed: In the roller Sketting, Rolling Shoes and smooth surface are used to minimize friction. |
| (d) Produce heat: The law of conservation of energy states that the amount of energy remain constant. Thus, the energy that is Neither to create or distroye (wite any 3.3) | (d) Makes movement difficult: Friction can make the job more difficult when one has to move the object. Excess friction can make it difficult |

Ans 24. Two Ananas for curing Asthma

- (1) **Gomukhasana** : This asana gets its name because while doing this asana, body resembles a cow face pose. In English it is called the cow face pose.

Pre stage: Sit in sukhasana or dandasana pose.

Method :

- Sit in sukhasana or dandasana pose.
 - Place the ankle of left leg near right butt. (thigh)
 - Place the right leg over the left thigh so that knees should place over each other.
 - Extend your left hand behind your back, facing palms upwards.
 - Extend your right hand over the right shoulder, bend your elbow and place it behind your back.
 - Inter lock fingers of both hands behind your back.
 - Now stretch both hands in their respective directions. Look straight.
 - Repeat with changing leg position.
- (2) **Parvatasana:** While performing this asana body resembles like a mountain that's why its named as parvatasana. It is a very easy asana.

Pre Stage: Sit in padmasana pose on ground.

Method: Sit in padmasana pose on ground.

- Fingers will have to be locked firmly inhale deeply and stretch your arms and bring the finger lock over head.
- Keep it vertically above your head.
- Turns up your palms over head with lock fingers.

Ans 25.

Minerals

Iron : It needs for formation of haemoglobin.

Calcium: It resources for bone and teeth formation.

Phosphorus : It makes strong teeth & bones.

Sodium : It helps nervous system for better neuromuscular responses.

Iodine : Control the activity of thyroid gland.

Fluoride : It helps teeth & nails.

Chloride : It helps body to fight against infection.

Or

Non-Nutritive component: of diet, compounds are not provide any calorie or energy but have their own importance. They are chemicals those gives food taste, colour, smell. some times non nutritive components are helped to control diabetes and cancers diseases.

Non-Nutritive components of food

- a. Water
- b. Fibers or Roughage
- c. Flavour compounds
- d. Colour compounds
- e. Plant compounds
- f. Preservatives
- g. Artificial sweeteners

Ans 26. Flexibility is an ability of an individual to move joint or group of joints effectively through of full range.

To maintain flexibility in games and sports stretching Exercises should be done. By following methods, one can improve their flexibility.

- **Stretch & hold method** - We stretch our joint to maximum limit and hold it for a few seconds before returning to the initial phase. The holding period must be not more than 3 to 8 sec. The method is also use for improving passive flexibility.
- **Ballistic Method** - In this method the stretching exercises are done in a swing, so this is called the ballistic method. A proper warm - up should be done before these exercise. Due to or stretching of the muscle can be done in a rhythm.
- **Post - Isometric Method** - This method is based on the principle of proprio-ceptive neuro- muscular facilitation means, If a muscle is contracted maximally for a few seconds. Then after the contraction it remains in a Static position for a few Seconds for 6-7 seconds and gives very low

resistance to that Stretch. The duration of the stretch should be increased up to 8-10 second and repeated 4-8 times for each muscle group.

Ans 27. Committee, "A group of the people, those are performed same task to make task efficiently.

Enlist of committees before tournament

1. **Organizing Committee:** Responsible for organizing and smooth running of the tournament. It instructs other committee one month prior to the tournament and assigns tasks and responsibilities to them.
2. **Publicity Committee:** Circulate the details to spread the information about tournament well in advance, about 8 to 4 weeks, before the tournament.
3. **Marketing Committee:** Purchase all equipment and other related items required for the tournament and ensure its quantity.
4. **Finance Committee:** Prepares budget and estimates for possible expenditure during the tournament.
5. **Transport Committee:** Ensures proper transport facilities for the tournament for players, officials and spectators.
6. **Food and Accommodation Committee:** Prepares accommodation and food for athletes, VIPs and officials.
7. **Committee for Officials:** Appoint officials for tournaments in proper no.
8. **Ground and Equipment Committee:** Prepares the ground/field before the tournament.
9. **Programme Committee:** Keeps the records of the participating teams and prepares fixture, in advance.
10. **FirstAid Committee:** Maintaining proper first aid kit for all possible situations during the tournament.

Write any six committees.

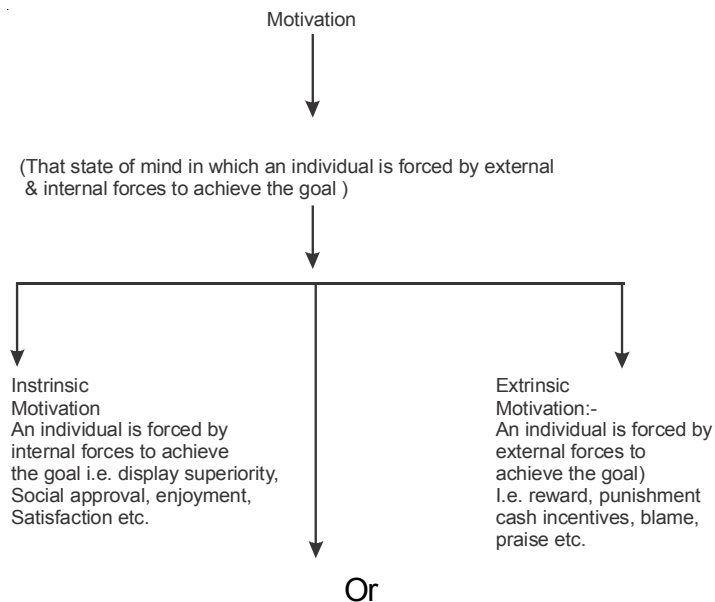
Ans 28. Reason of irregular menstrual cycle-A menstrual disorder is physical or emotional problem that interferes the normal menstrual cycle causes pain, heavy or light bleeding, delay or missed period

Reasons

1. Diseases
2. Genetically (Heredity)
3. High anxiety
4. Miscarriage
5. Mental stress
6. Consumption of more medicines
7. Weakness
8. High level – training
9. Malnutrition

Write any six reasons.

Ans 29.



Strategies for enhancing exercises

When we try to do any sports activity repeatedly then it is known as practice serial. The following strategies are for practice serial.

Ans 30. **Circuit Training:** Circuit training is a form of body conditioning or resistance training using high intensity aerobics. It targets strength building or muscular endurance.

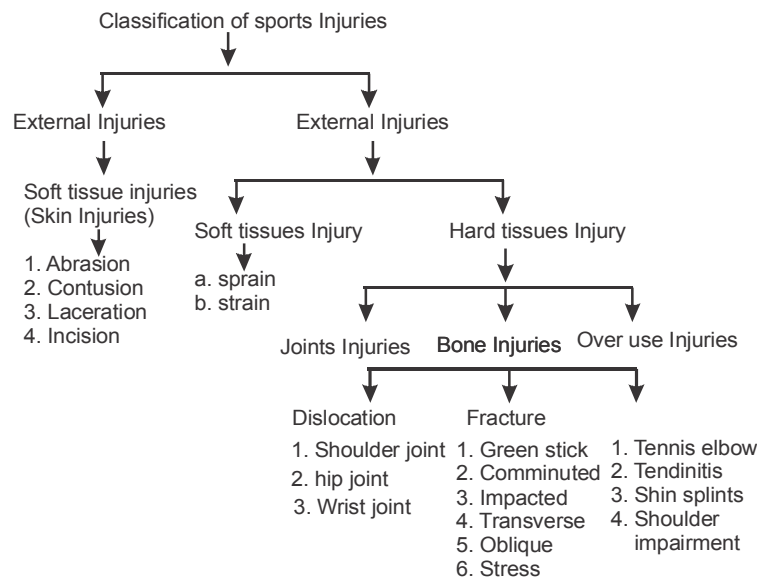
Advantage of Circuit Training: This training method has the following Advantage on a trainee

- (i) It improves cardiovascular fitness through exercises such as jumping rope, joggine etc.
- (ii) It improves general fitness by improving strength, flexibility and endurance.
- (iii) VO_2 max improves. This means that the body can take in more oxygen to be utilised by the muscles.
- (iv) Improves oxygen consumption by muscles.
- (v) Circuit training improves muscles strength. But it does not improve maximum strength or explosive strength.
- (vi) It improves muscular endurance.
- (vii) Helps in improving metabolism.
- (viii) Reduces injuy Risk
- (ix) Helps with diseases prevention
- (x) Best methods for beginners.

SECTION C

Ans 31.

Classification of sports Injuries



1. Price Treatment

- P-Protect the wound
- R-Rest-No more movement

-
- I-Ice-To stop the bleeding
 - C-Compression - To stop bleeding
 - E-Elevation - Heart level

Ans 31. Write the immediate effects of exercise on Cardio-Vascular system?

1. **Increase in heart rate** : When an individual starts exercise, his heart rate increases as per the intensity and duration of exercise.
2. **Increase in stroke volume** : Stroke volume increases proportionally with exercise intensity. It is measured in ml/ beat.
3. **Increase in cardiac output** : Cardiac output increases proportionally with the intensity of exercise's is measured in ltr/ mintue.
4. **Increases in blood flow** : Cardio-vascular can be distribute more blood to those tissues which have more demand and less blood & those tissues which have less demand for oxygen.
5. **Increase in blood pressure** : During the exercise, systolic blood pressure can increase while diastolic blood pressure usually remains unchanged even during the intensive exercise.

Ans 32. Big 5 traits theory refers that individual personality can be assessed on the basis of 5 big traits named openness conscientiousness, extroversion, Agreeableness, Neuroticism,

1. **Openness Traits:** The accessment of openness traits shows that how the person is
 - * Imaginative
 - * Insightful
 - * having variety of interest
 - * with degree of intellectual curiosity
 - * creative
 - * able to enjoy the new experiences
 - * able to earn new changes & concept

2. Conscientiousness: The assessment of this trait shows the personal ability of the person

1. Competence
 2. Self Discipline
 3. Dutiful
 4. Order
 5. Deliberation
 6. Achievement striving
- * Compete with life challenges
 - * Control self discipline
 - * To act dutifully
 - * To plan & to organize
 - * Work independently
 - * To do hard work

3. Extraversion: The assessment of this trait shows that how the person.

1. Warmth
 2. Positiveness
 3. Assertiveness
 4. Gregariousness.
 5. Excitement
- * is energetic
 - * has positive emotions
 - * dominate social situations
 - * is sociable
 - * is talkative
 - * fun loving
 - * has friendly nature or has tendency to make new friends
 - * able to get affection from others

4. Agreeableness: The assessment of this trait shows that the person.

- * has sense of cooperation
- * is systematic
- * is kind
- * is friendly
- * is gentle

5. Neuroticism: The assessment of this trait shows that the person.

- * has emotional stability
- * is able to control anger
- * is able to control the level of anxiety
- * is able to protect him self from depression.

Ans 33. Rickly and Jone's Senior Citizen Fitness. Test

Test Items and objectives.	Parts of Body-Physical Fitness Components
1. Chair stand. Test for lower body strength.	1. Lower body strength, leg strength & Endurance
2. Arm curl test for upper body flexibility	2. The upper body strength, arm flexor, strenght & endurance
3. Chair sit & reach test for lower body flexibility	3. The hemi string and lower back flexibility
4. Back-scratch test for upper body flexibility	4. The upper body flexibility of the body & range of motion of the shoulders
5. Eight foot up & Go test for agility	5. The motor agility, speed & balance
6. Six minute walk test for aerobic endurance	6. Cardio-vascular endurance & recovery

Or

Ans 33. The steps to improve women participation in the field of sports and games:-

1. Motivation and inspiration to women for participation.
2. Support from family and parents.
3. To organise camp, seminar and workshops.
4. To provide knowledge and media coverage.
5. Educating women at grass root level and participation.
6. Provide better infrastructure and facilities.
7. Ensuring safety and security for women.
8. More opportunity for competition.
9. Develop new techniques and environments.
10. To build physical and psychological strength.
11. Healthy and balance food.
12. Better incentives and awards.
13. Change in attitude and perception at rural level,
14. Equality and community mobilizing,
15. Development of self Confidence,
16. Financial help,
17. Employment and career,
18. Designing and implementing government policies,

Ans 34. Draw a Fixture for 23 teams on the basis of knock out tournament.

Total no. Team – 23

* Total no. of Matches = $n - 1 = 23 - 1 = (22)$

* Total no. of Rounds = $2^5 - \text{no. of teams.}$

Rounds = 5.

Bye = $32 - 23 \Rightarrow 9$

* Total no. of Teams in upper half = $\frac{n-1}{2} = \frac{23-1}{2} = \frac{22}{2}$ (11) winner

Total no. of teams in lower half = $\frac{n+1}{2} = \frac{24}{2} = (12)$ Runner-up

Bye upper half = $\frac{B+1}{2} = \frac{9+1}{2} = \frac{10}{2} = (5)$

Bye Lower half = $\frac{B+1}{2} = \frac{8}{2} = (4)$

