

Strictly Confidential: (For Internal and Restricted use only)
Senior School Certificate Examination-2020
Marking Scheme – PHYSICAL EDUCATION
(SUBJECT CODE : 048) (PAPER CODE : 75) SERIES : HMJ

General Instructions: -

1. You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems which may affect the future of the candidates, education system and teaching profession. To avoid mistakes, it is requested that before starting evaluation, you must read and understand the spot evaluation guidelines carefully. **Evaluation is a 10-12 days mission for all of us. Hence, it is necessary that you put in your best efforts in this process.**
2. Evaluation is to be done as per instructions provided in the Marking Scheme. It should not be done according to one's own interpretation or any other consideration. Marking Scheme should be strictly adhered to and religiously followed. **However, while evaluating, answers which are based on latest information or knowledge and/or are innovative, they may be assessed for their correctness otherwise and marks be awarded to them.**
3. The Head-Examiner must go through the first five answer books evaluated by each evaluator on the first day, to ensure that evaluation has been carried out as per the instructions given in the Marking Scheme. The remaining answer books meant for evaluation shall be given only after ensuring that there is no significant variation in the marking of individual evaluators.
4. Evaluators will mark(✓) wherever answer is correct. For wrong answer 'X' be marked. Evaluators will not put right kind of mark while evaluating which gives an impression that answer is correct and no marks are awarded. **This is most common mistake which evaluators are committing.**
5. If a question has parts, please award marks on the right-hand side for each part. Marks awarded for different parts of the question should then be totaled up and written in the left-hand margin and encircled. This may be followed strictly.
6. If a question does not have any parts, marks must be awarded in the left-hand margin and encircled. This may also be followed strictly.
7. If a student has attempted an extra question, answer of the question deserving more marks should be retained and the other answer scored out.
8. No marks to be deducted for the cumulative effect of an error. It should be penalized only once.
9. A full scale of marks **0-70** has to be used. Please do not hesitate to award full marks if the answer deserves it.
10. Every examiner has to necessarily do evaluation work for full working hours i.e. 8 hours every day and evaluate 20 answer books per day in main subjects and 25 answer books per day in other subjects (Details are given in Spot Guidelines).
11. Ensure that you do not make the following common types of errors committed by the Examiner in the past:-
 - Leaving answer or part thereof unassessed in an answer book.
 - Giving more marks for an answer than assigned to it.
 - Wrong totaling of marks awarded on a reply.
 - Wrong transfer of marks from the inside pages of the answer book to the title page.
 - Wrong question wise totaling on the title page.
 - Wrong totaling of marks of the two columns on the title page.
 - Wrong grand total.
 - Marks in words and figures not tallying.
 - Wrong transfer of marks from the answer book to online award list.
 - Answers marked as correct, but marks not awarded. (Ensure that the right tick mark is correctly and clearly indicated. It should merely be a line. Same is with the X for incorrect answer.)

- Half or a part of answer marked correct and the rest as wrong, but no marks awarded.
12. While evaluating the answer books if the answer is found to be totally incorrect, it should be marked as cross (X) and awarded zero (0)Marks.
 13. Any unassessed portion, non-carrying over of marks to the title page, or totaling error detected by the candidate shall damage the prestige of all the personnel engaged in the evaluation work as also of the Board. Hence, in order to uphold the prestige of all concerned, it is again reiterated that the instructions be followed meticulously and judiciously.
 14. The Examiners should acquaint themselves with the guidelines given in the Guidelines for spot Evaluation before starting the actual evaluation.
 15. Every Examiner shall also ensure that all the answers are evaluated, marks carried over to the title page, correctly totaled and written in figures and words.
 16. The Board permits candidates to obtain photocopy of the Answer Book on request in an RTI application and also separately as a part of the re-evaluation process on payment of the processing charges.

**PHYSICAL EDUCATION
SERIES : HMJ**

Q.No	ANSWER	MARKS DISTRIBUTION	TOTAL
SECTION A			
1.	The competitions organised outside the boundary wall of an institution are called : Ans: (C) Extramural	1	1
2.	League tournament is also known as : Ans: (C) Round Robin	1	1
3.	Match List I with List II : Ans: (A) i iv ii iii	1	1
4.	The main sources of protein are : Ans: (A) Fish, meat and eggs	1	1
5.	Which one of the following asanas can be performed immediately after the meals? Ans: (D) Vajrasana	1	1
6.	Which one of the following asanas is not a remedial asana for treating obesity? Ans: (B) Tadasana	1	1
7.	Cognitive disability is a broad term that includes : Ans: (A) Intellectual disability (OR) SPD means (B) Sensory Processing Disorder	1	1
8.	ADHD means : Ans: (B) Attention Deficit Hyperactivity Disorder	1	1
9.	Abnormal curve of the spine at the front is called : Ans: (C) Lordosis	1	1
10.	In bow-legs, there is/are : Ans: (A) wide gap between the knees	1	1
11.	The weight of medicine balls for girls and boys in a Barrow test is respectively : Ans: Option (A) Should have been 1 and 3Kgs instead of pounds. Since the correct option is not given – full marks to be given if the question is attempted.	1	1
12.	Rockport test is used to measure : Ans: (A) Endurance (OR) Sit and reach test is conducted to measure: (A) Flexibility	1	1
13.	Sprain is an injury of the : Ans: (B) Ligament (OR) Laceration is a _____ (A) Irregular cut on skin	1	1

14.	The capacity of muscles to absorb and consume oxygen is called : Ans: (B) Oxygen uptake	1	1
15.	Acceleration of an object will increase as the net force increases, depending on its : Ans: (B) Mass	1	1
16.	Friction always acts _____ the motion of an object. Ans: (C) Opposite to	1	1
17.	Endomorphic, Mesomorphic and Ectomorphic are types of : Ans: (C) Personalities (OR) Traits like insight, imagination, receptivity towards new ideas are involved with: (A) Openness	1	1
18.	The source of intrinsic motivation is : Ans: (C) Self	1	1
19.	While exercising on a multigym, the type of muscular contraction that occurs is : Ans: (C) Isokinetic	1	1
20.	Resistance ability against fatigue is called : Ans: (C) Endurance	1	1
SECTION B			
21.	List down the nutritive components of diet and explain any one. Ans: The nutritive components of diet are Proteins, Carbohydrates, Fats, Vitamins and Minerals Vitamins: Vitamin is an organic molecule required in small quantities for the proper functioning of metabolism. Vitamins can protect us from various diseases. Deficiency causes diseases like Scurvy, Rickets, night blindness etc. Vitamins are classified as water soluble and fat soluble Vitamins. Water soluble vitamins - Vitamin B and Vitamin C Fat soluble vitamins – Vitamin A, vitamin D, vitamin E, vitamin K. Some sources of vitamins are green leafy vegetables, fruits, milk, egg, meat etc. (Explain any 1 nutrient) (OR) What do you understand by ‘non-nutritive components’? Elucidate any four non-nutritive components of diet. Ans: Non-nutritive components are compounds absorbed from food but do not provide energy in form of calories, but are important for transportation, Intestinal function, flavour etc. Non-nutritive components are: Fiber and Roughage, water, plant compounds, flavor compounds, colour compounds, preservatives, pesticides, Artificial sweeteners.	1 2 1 (½x4)	3

	<p>to stop.</p> <p>4. The heart – rate is measured between 1 to 1.5 min, after finishing the exercise.</p> <p>5. The same is repeated after 2 to 2.5 minutes and 3 to 3.5 minutes.</p> <p>The pulse of all the 3 half minute counts are recorded to get the fitness index.</p> <p>Computation of fitness index score =</p> $\frac{100 \times \text{test duration in seconds}}{2 \times \text{sum of heartbeats in recovery periods}}$		
27.	<p>Define speed and explain any one method to develop it.</p> <p>Ans:-speed:- Ability to cover maximum distance in minimum time. Or ability to produce the greatest possible impulse at the shortest possible time.</p> <p>Methods to develop speed.</p> <ol style="list-style-type: none"> 1. Acceleration run: 2. Pace run <p>Acceleration runs: In this method, athlete tries to attain top speed as fast as possible. When an athlete sprints, she/he does not start running at maximal speed. It is attained through gradual increment. The athlete runs for a specific distance, starting at zero speed and the working towards maximal velocity during the course of running. The sprinter actually starts accelerating after the first 30 Mts. Or about 4 to 6 seconds. Accelerated runs are repeated with sufficient intervals in between. Repetition may vary according to the capacity and limitation of an athlete.</p> <p>(Explain any one method)</p>	<p>1</p> <p>2</p>	3
28.	<p>Discuss in detail about any two movements of the body.</p> <p>Ans:- Types of Movements:</p> <ol style="list-style-type: none"> 1. Flexion 2. Extension 3. Adduction 4. Abduction 5. Circumduction <p>Flexion: - take place when the angle decreases between the two bones attached to the joint, e.g. flexion of knee joint.</p> <p>Extension: - Is the opposite of flexion. Extension occurs when the angle between the two bones increases e.g. extension of knee joint</p> <p>(Explain any two)</p>	1½ + 1½	3
29.	<p>What do you understand by the term Exercise Adherence?</p> <p>Ans:-Exercise Adherence refers to maintaining a systematic approach to prolonged period of time following the initial adaption phase. Exercise adherence reflects about continued participation of an individual in exercise training programme. Exercise is any bodily activity that enhances or maintains physical fitness and overall health as well as wellness. It</p>	1 + 2	3

	<p>helps an individual to perform daily tasks smoothly and efficiently.</p> <p style="text-align: center;">(OR)</p> <p>What are the types of aggression?</p> <p>Ans: <u>Hostile Aggression:</u> A reactive aggression accompanied with anger with intension of inflicting/ causing harm either physical or psychological.</p> <p><u>Instrumental Aggression:</u> A channeled aggression accompanied by anger intends to hurt in order to achieve the goal. Mostly found in contact sports.</p> <p><u>Assertive Aggression:</u> Intention is to establish dominance than to harm the opponent. It is goal oriented and use of legitimate force.</p>	1 +1 +1					
30.	<p>Differentiate between Isometric and Isotonic exercises.</p> <p>Ans:-</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">Isometric Exercises</th> <th style="text-align: center;">Isotonic Exercises</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> -Movements are not visible. -Length of the exercising muscles doesn't change. -less muscular endurance -develop strength at specific place -develop strength -recovery from fatigue is slow. e.g. pushing a wall </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> -Movements are visible. -Length of the exercising muscles change. -more muscular endurance - develop uniform strength - develop flexibility along with strength. -recovery from fatigue is fast. e.g. Free hand exercises </td> </tr> </tbody> </table> <p style="text-align: center;">(Any 3 difference)</p>	Isometric Exercises	Isotonic Exercises	<ul style="list-style-type: none"> -Movements are not visible. -Length of the exercising muscles doesn't change. -less muscular endurance -develop strength at specific place -develop strength -recovery from fatigue is slow. e.g. pushing a wall 	<ul style="list-style-type: none"> -Movements are visible. -Length of the exercising muscles change. -more muscular endurance - develop uniform strength - develop flexibility along with strength. -recovery from fatigue is fast. e.g. Free hand exercises 	1x3	3
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SECTION C							
31.	<p>Discuss in detail the different types of coordinative ability.</p> <p>Ans:- coordinative abilities</p> <ol style="list-style-type: none"> 1. Orientation ability 2. Coupling ability 3. Balance ability 4. Reaction ability 5. Rhythm ability 6. Adaption ability 7. Differentiation ability <p>Coupling ability: ability to combine movements of different body parts for performing perfect movements.</p> <p style="text-align: center;">(explain any 5 types)</p> <p style="text-align: center;">(OR)</p> <p>What are knockout tournaments? Draw a knockout fixture for 19 teams, mentioning all the steps involved</p> <p>Knock out tournament is a type of elimination tournament, where the loser of each match is eliminated from the tournament. .</p> <p>No. of teams -19</p> <p>Number of matches $N-1 = 19-1 = 18$</p> <p>No of teams in U/H $\frac{N+1}{2} = \frac{20}{2} = 10$</p>	1x5	5				
		1+2+2	5				

	<p>No of teams in L/H $\frac{N-1}{2} = \frac{18}{2} = 9$</p> <p>No of Rounds 5 rounds</p> <p>No of byes = next power of 2 – N = 32-19 =13</p> <p>No of byes in U/H – $\frac{NB-1}{2} = \frac{13-1}{2} = 6$</p> <p>No of byes in L/H – $\frac{NB+1}{2} = \frac{13+1}{2} = 7$</p>		
32.	<p>Write short notes on OCD and ODD.</p> <p>OCD- obsessive compulsive disorder is a mental disorder in which a person feels the need to perform a certain routine repeatedly or has certain unwanted thoughts of fear that causes them to perform rituals/routines repeatedly.</p> <p>Symptoms of obsession- (1) a fear of harm to oneself or</p>	2½	5

	<p>loved ones(2) a fear of getting dirty (3)a fear of making mistakes etc.</p> <p>Common compulsions (1) constant praying (2) bathing or washing hands several times (3) checking things over and over again etc.</p> <p>Cause of OCD: could be hereditary, chemical imbalance in the brain, stress and anxiety can worsen OCD.</p> <p>ODD- oppositional defiant disorder is defined as “a pattern of angry/irritable mood, argumentative/defiant behavior or vindictiveness” found in children and adolescents.</p> <p>Symptoms of ODD: - often losing temper- blame others- refuse to comply- resentment and revengeful attitude – angry and irritable mood – uncooperative and hostile – upset others</p> <p>Cause of ODD: - Biological/genetic factors – physical factors – psychological factors – Environmental factors.</p>	2½	
33.	<p>What are the effects of exercising on the cardio-respiratory system? Explain</p> <p>Ans:- Short term effects of exercise</p> <ol style="list-style-type: none"> 1. Increase heart rate 2. Increase is blood pressure 3. Increase stroke volume 4. Rate of respiration increases <p>Long term effect of exercise</p> <ol style="list-style-type: none"> 1. Increase in cardiac out put 2. Depth in respiration increases. 3. Aerobic capacity increase. 4. Increase in tidal volume. 5. Increase in vital capacity. 6. Delay in second wind <p style="text-align: center;">(Explain any 5 points)</p>	1x5	5
34.	<p>What do you understand by the female athlete triad? Explain the symptoms and causes of any one of them.</p> <p>Ans:- Female athlete triad:- It is the syndrome common in female which consists of osteoporosis (weak bones), Amenorrhea (absence of menstrual periods), eating disorders.</p> <p>Osteoporosis Symptoms:</p> <ol style="list-style-type: none"> 1. Fatigue. 2. Weight loss. 3. Pain in bones and joints 4. Lack in bone strength 5. Stress fracture <p>Osteoporosis Causes;</p> <ol style="list-style-type: none"> 1. Insufficient calcium in diet 2. Amenorrhea 3. Eating disorders 4. Poor nutrition 5. Sedentary life style <p style="text-align: center;">(Explain any two from each)</p>	1 2 2	5

	<p style="text-align: center;">(OR)</p> <p>Explain Newton's laws of motion and their application in sports.</p> <p>Ans:-Application of Newton's law</p> <p>Newton's first law of motion –The law of inertia: A body at rest tends to remain at rest. A body in motion tends to continue in motion with consistent speed and in the same direction unless acted upon by an outside force. E.g. A hockey ball hit by a player will move with the same speed in same direction until it is diverted by some obstruction on the floor or stopped by an opponent, which will be the external force.</p> <p>Newton's Second law of motion -The Law of Acceleration</p> <p>Newton's second law states that acceleration is produced when a force acts on a mass. The greater the mass of the object being accelerated, the more force is needed to accelerate that object and inversely proportional to the mass. The equation $F = ma$. For example, to throw a 4-kilogram shot-put as far as a 3-kilogram shot-put, the force applied must be greater.</p> <p>Newton third Law of Motion-The Law of Action and Reaction: Newton's third law of motion states that for every force that is exerted on a body there is an equal and opposite reaction.</p> <p>A Swimmer propels herself through the water by pushing the water backwards in exerting the force. Her hands pushing the water allows her to move. (Explain law with suitable example)</p>	5	
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