MATHEMATICAL APTITUDE

This section deals with questions on simple mathematical operations. Here, the four fundamental operations – addition, subtraction, multiplication and division and also statements such as 'less than', 'greater than', 'equal to', 'note equal to' etc. are represented by symbols, different from the usual ones. The questions involving these operations are set using artificial symbols. The candidate has to substitute the real signs and solve the question accordingly, to get the answer.

❖ **EXAMPLES** ❖

Ex.1 $\dfrac{5}{?} = \dfrac{?}{1.25}$

(a) 0.0025   (b) 0.025

(c) 0.025   (d) 2.5

Sol. The answer is (d), i.e. 2.5,

because $\dfrac{5}{2.5} = 2$ and $\dfrac{2.5}{1.25} = 2$

Alternately, put X in both blank spaces so that $\quad X \times X = 1.25 \times 5 \quad \therefore \quad X = 2.5$

Ex.2 $\dfrac{\sqrt{1296}}{?} = \dfrac{?}{2.25}$

(a) 6   (b) 7   (c) 8   (d) 9

Sol. The answer is (d) i.e. 9, because

$\dfrac{\sqrt{1296}}{9} = 4$ and $\dfrac{9}{2.25} = 4$

or, put X in both blank spaces, sothat

$X^2 = \sqrt{1296} \times 2.25$

$\therefore X = 9$

Problem solving by substitution

(i) In this type, you are provided with substitutes for various mathematical symbols, followed by a question involving calculation of an expression or choosing the correct / incorrect equation. The candidate is required to put in the real signs in the given equation and then solve the question as required.

Note : While solving a mathematical expression, proceed according to the rule BODMAS – i.e. Brackets, Of, Division, Multiplication, Addition, Subtraction.

e.g., $(36 - 12) \div 4 + 6 \div 2 \times 3$

$= 24 \div 4 + 6 \div 2 \times 3$ (Solving Bracket)

$= 6 + 3 \times 3$ (Solving Division)

$= 6 + 9$ (Solving Multiplication)

$= 15$ (Solving Addition)

❖ **EXAMPLES** ❖

Ex.3 If '+' means 'divided by', '−' means 'multiplied by', 'x' means 'minus' and '÷' means 'plus', which of the followig will be the value of the expression $16 \div 8 - 4 + 2 \times 4$?

(a) 16   (b) 28   (c) 32   (d) 44

Sol. Putting the proper signs in the given expression, we get :

$16 + 8 \times 4 \div 2 - 4 = 16 + 16 - 4$

$= 32 - 4 = 28$.

So, the answer is (b),

Ex.4 If + means ÷, − means ×, ÷ means + and × means −, then

$36 \times 12 + 4 \div 6 + 2 - 3 = ?$

(a) 2   (b) 18   (c) 42   (d) $6\frac{1}{2}$

Sol. Using the proper signs, we get :

$36 - 12 \div 4 + 6 \div 2 \times 3 = 36 - 3 + 3 \times 3$

$= 36 - 3 + 9 = 45 - 3 = 42$

So, the correct answer is (c)

Ex.5 If A means 'plus', B means 'minus', C means 'divided by' and D means 'multiplied by', then 18 A 12 C 6 D 2 B 5 = ?

(a) 15   (b) 25

(c) 27   (d) None of these

Sol. Using the proper signs, we get :

$$\begin{aligned} \text{Given expression} &= 18 + 12 \div 6 \times 2 - 5 \\ &= 18 + 2 \times 2 - 5 \\ &= 18 + 4 - 5 \\ &= 22 - 5 = 17 \end{aligned}$$

So, the answer is (d).

Ex.6 If × stands for −, ÷ stands for +, + stands for ÷ and − stands for ×, which one of the following equation is correct ?

(a) $15 - 5 \div 5 \times 20 + 10 = 6$

(b) $8 \div 10 - 3 + 5 \times 6 = 8$

(c) $6 \times 2 + 3 \div 12 - 3 = 15$

(d) $3 \div 7 - 5 \times 10 + 3 = 10$

Sol. Using the proper signs, we get :

$$\begin{aligned} \text{Expression in (a)} &= 15 \times 5 + 5 - 20 \div 10 \\ &= 15 \times 5 + 5 - 2 \\ &= 75 + 5 - 2 = 78 \end{aligned}$$

$$\begin{aligned} \text{Expression in (b)} &= 8 + 10 \times 3 \div 5 - 6 \\ &= 8 + 10 \times \frac{3}{5} - 6 \\ &= 8 + 6 - 6 = 8 \end{aligned}$$

$$\begin{aligned} \text{Expression in (c)} &= 6 - 2 \div 3 + 12 \times 3 \\ &= 6 - \frac{2}{3} + 36 \\ &= 42 - \frac{2}{3} = \frac{124}{3} \end{aligned}$$

$$\text{Expression in (d)} = 3 + 7 \times 5 - 10 \div 3$$

$$= 3 + 7 \times 5 - \frac{10}{3}$$

$$= 3 + 35 - \frac{10}{3} = \frac{104}{3}$$

∴ Statement (b) is true.

Ex.7 It being given that : > denotes +, < denotes −, + denotes ÷, − dentotes =, = denotes 'less than' and × denotes 'greater than', find which of the following is a correct statement.

    (a) $3 + 2 > 4 = 9 + 3 < 2$

    (c) $3 > 2 < 4 \times 8 + 4 < 2$

    (b) $3 > 2 > 4 = 18 + 3 < 1$

    (d) $3 + 2 < 4 \times 9 + 3 < 3$

Sol. Using proper notations, we have :

  (a) Given statement is $3 \div 2 + 4 < 9 \div 3 - 2$

    or $\frac{11}{2} < 1$, which is not true.

  (b) Given statement is $3 + 2 + 4 < 18 \div 3 - 1$

    or $9 < 5$, which is not true.

  (c) Given statement is $3 + 2 - 4 > 8 \div 4 - 2$

    or $1 > 0$, which is true.

  (d) Given statement is $3 \div 2 - 4 > 9 \div 3 - 3$

    or $-\frac{5}{2} > 0$, which is not true.

    So, the statement (c) is true.

  (i) Interchange of signs and numbers

  (ii) Deriving the appropriate conclusion.

❖ **EXAMPLES** ❖

Ex.8 If the given interchanges namely : signs + and ÷ and numbers 2 and 4 are made in signs and numbers, which one of the following four equations would be correct ?

    (A) $2 + 4 \div 3 = 3$ (B) $4 + 2 \div 6 = 1.5$

    (C) $4 \div 2 + 3 = 4$ (D) $2 + 4 \div 6 = 8$

Sol. Interchanging + and ÷ and 2 and 4, we get:

  (A) $4 \div 2 + 3 = 3$ or $5 = 3$, which is false.

  (B) $2 \div 4 + 6 = 1.5$ or $6.5 = 1.5$, which is false.

  (C) $2 + 4 \div 3 = 4$ or $\frac{10}{3} = 4$, which is false

  (D) $4 \div 2 + 6 = 8$ or $8 = 8$, which is true.

Ex.9 Which one of the four interchanges in signs and numbers would make the given equation correct? $3 + 5 - 2 = 4$

    (A) + and −, 2 and 3 (B) + and −, 2 and 5

    (C) + and −, 3 and 5 (D) None of these

Sol. By making the interchanges given in (A), we get the equation as $2 - 5 + 3 = 4$

or $0 = 4$, which is false.

Ex.10 It being given that × denotes 'greater than', ϕ denotes 'equal to', < denotes 'not less than', $\perp$ denotes 'not equal to', Δ denotes 'less than' and + denotes 'not greater than', choose the correct statement from the following:

If $a \times b \Delta c$, it follows that   (A) $a \phi c \Delta b$ (B) $b < a \times c$

(C) $a < b + c$ (D) $b < a \phi c$

Sol. Using the usual notations, we have :

(A) The statement is $a > b < c \Rightarrow a = c < b$,

which is false.   [$\because c > b$]

(B) The statement is $a > b < c \Rightarrow b \nleq a > c$,

which is false.   [$\because b < a$]

(C) The statement is $a > b < c \Rightarrow a \nleq b \nleq c$,

which is false .   [$\because b < a$]

(D) The statement is $a > b < c \Rightarrow c \nleq b \nleq a$,

which is false.   [$\because b < a$]

Hence, the statement (C) is true.

Ex.11 In the following questions, the symbols $\cdot$, $\pm$, $=$, @ are @ used with the following meanings:

'A $\cdot$ B' means 'A is greater than B';

'A $\pm$ B' means 'A is either greater than or equal to B';

'A = B' means 'A is equal to B';

'A @ B' means 'A is smaller than B';

'A @ B' means 'A is eithter smaller than or equal to B'.

Now, in each of the following questions, assuming the given statements to be true, find which of the conclusions I and II given below them is/are definitely true ?

Give answer (A) if only conclusion I is true; (B) if only conclusion II is true; (C) if either I or II is true; (D) if neither I nor II is true and (e) if both I and II are true.

1. Statements : M = T, T @ Z, S $\cdot$ M

   Conclusions : I. Z $\cdot$ M   II. Z = M

2. Satements : R @ M, M $\cdot$ P, R $\pm$ L

   Conclusions : I. M = L   II. P = L

3. Satements : L @ C, C * Z, Z @ F

   Conclusions : I. C $\cdot$ F   II. F = C

4. Statements : Z @ B, N $\pm$ S, B @ N

   Conclusions : I. B = Z   II. S @ B

5. Statements : T $\pm$ P, P @ S, P = M

   Conclusions : I. S $\cdot$ M   II. T @ S

Sol. Given statements : M = T, T $\leq$ Z, S > M

Now, to verify conclusions I and II, we need to find a relation between Z and M.

$Z \geq T$, $T = M \Rightarrow Z \geq M$

$\Rightarrow$ Z > M or Z = M i.e., Z $\cdot$ M

or   Z = M.

So, either I or II follows.

Hence, the answer is (C)

2. Given statements : $R \leq M$, $M > P$, $R \geq L$

(I) Relation between M and L :

$M \geq R$, $R \geq L \Rightarrow M \geq L$ i.e., $M \cdot L$.

So, I is not true.

(II) Relation between P and L.

$P < M$, $M \geq R$, $R \geq L \Rightarrow$ no definite conclusion.

So, (II) is also not true.

Hence, the answer is (D).

3. Given statements : $L < C$, $C > Z$, $Z \leq F$.

Clearly, we find a relation between C and F. $C > Z$, $Z \leq F \Rightarrow$ no definite conclusion.

So, neither I nor II is true.

Hence, the answer is (D).

4. Given statements : $Z < B$, $N \geq S$, $B < N$

(I) Relation between B and Z :

Clearly, $B > Z$ i.e., $B \cdot Z$.

So, (I) is not true.

(II) Relation between S and B :

$S \leq N$, $N > B \Rightarrow$ no definite conclusion.

So, (II) is also not true.

Hence, the answer is (D)

5. Given statements : $T \geq P$, $P < S$, $P = M$

(I) Relation between S and M :

$S > P$, $P = M \Rightarrow S > M$ i.e., $S \cdot M$

So, I is true.

(II) Relation between T and S :

$T \geq P$, $P < S \Rightarrow$ no definite conclusion.

So, II is not true, Hence the answer is (A).

Ex.12 Given interchanges : Signs – and ÷ and numbers 4 and 8

(A) $6 - 8 \div 4 = -1$ (B) $8 - 6 \div 4 = 1$

(C) $4 \div 8 - 2 = 6$ (D) $4 - 8 \div 6 = 2$

Sol.   On interchanging – and ÷ and 4 and 8 in (C), we get the equation as $8 - 4 \div 2 = 6$

or $8 - 2 = 6$ or $6 = 6$, which is true.

Ex.13 Given interchanges : Signs + and × and numbers 4 and 5

(A) $5 \times 4 + 20 = 40$ (B) $5 \times 4 + 20 = 85$

(C) $5 \times 4 + 20 = 104$ (D) $5 \times 4 + 20 = 95$

Sol.   On interchanging + and × and 4 and 5 in (C), we get the equation as $4 + 5 \times 20 = 104$

or $104 = 104$, which is true.

Ex.14 $5 + 6 \div 3 - 12 \times 2 = 17$

(A) ÷ and ×   (B) + and ×

(C) + and ÷   (D) + and –

Sol.   On interchanging ÷ and ×, we get :

Given expression $= 5 + 6 \times 3 - 12 \div 2$

$= 5 + 6 \times 3 - 6$

$= 5 + 18 - 6 = 17$

Ex.15 $2 \times 3 + 6 - 12 \div 4 \equiv 17$

(A) × and +   (B) + and –

(C) + and ÷   (D) – and ÷

Sol.   On interchanging × and +, we get :

Given expression $= 2 + 3 \times 6 - 12 \div 4$

$= 2 + 3 \times 6 - 3$

$= 2 + 18 - 3 = 17$

Ex.16 Which of the following two signs need to be interchanged to make the given equation correct?

$10 + 10 \div 10 - 10 \times 10 = 10$ (A) + and –   (B) + and ÷

(C) + and ×   (D) ÷ and +

Sol.   On interchanging + and ×, we get the equation as

$10 \times 10 \div 10 - 10 + 10 = 10$

or $10 \times 1 - 10 + 10 = 10$

or $10 = 10$, which is true.
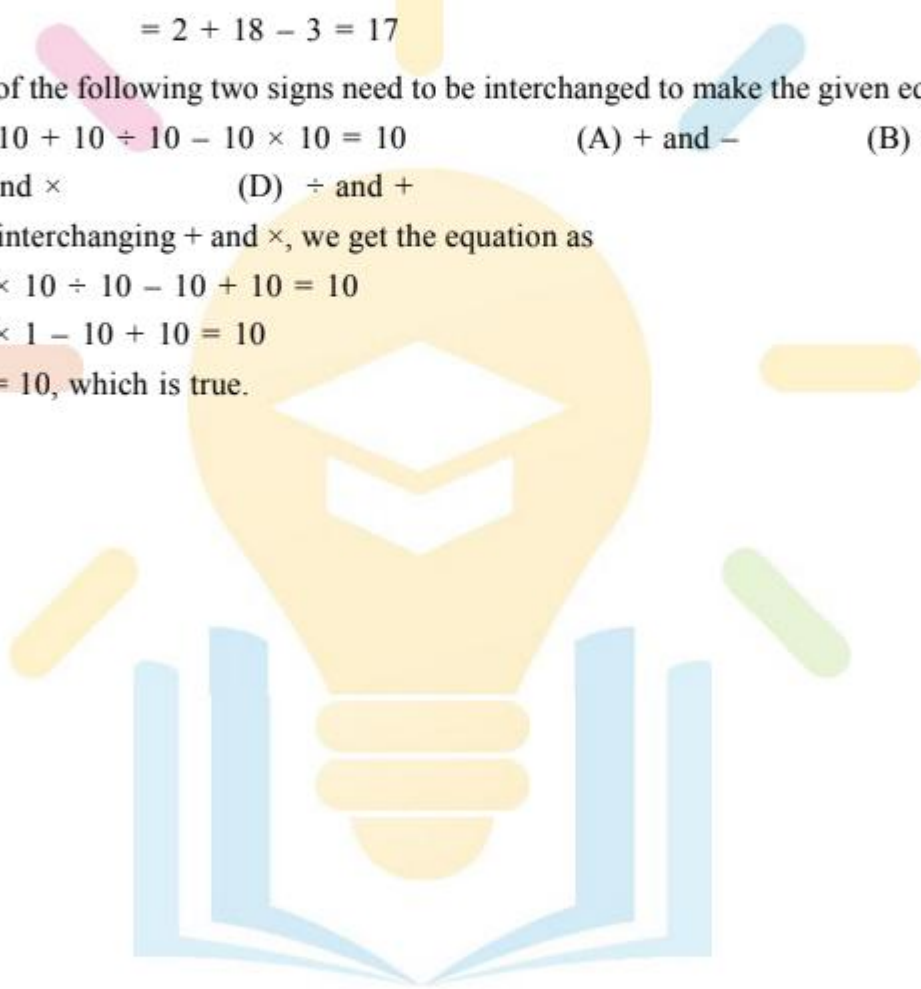
EXERCISE

Q.1 $\dfrac{50}{?} = \dfrac{?}{12\frac{1}{2}}$

(A) 25/2   (B) 4/25   (C) 25   (D) 5/25

Q.2 $\dfrac{21}{?} = \dfrac{?}{2\frac{1}{3}}$

(A) 4/3   (B) 7/3   (C) 71/3   (D) 7

Q.3 $\dfrac{0.27}{?} = \dfrac{?}{0.03}$

(A) 9.00   (B) 0.99   (C) 0.09   (D) 0.19

Q.4 $\dfrac{1.005}{?} = \dfrac{?}{4.02}$

(A) 2.04   (B) 2.05   (C) 2.02   (D) 2.01

Q.5 $\dfrac{1.44}{?} = \dfrac{?}{0.01}$

(A) 0.112   (B) 1.12   (C) 0.12   (D) 0.012

Q.6 $\dfrac{\sqrt{625}}{?} = \dfrac{?}{16}$

(A) 0.025   (B) 2.05   (C) 0.025   (D) 20.0

Q.7 $\dfrac{1.21}{?} = \dfrac{?}{1}$

(A) 1.01   (B) 0.011   (C) 0.10   (D) 2.10

Q.8 $\dfrac{2.7}{?} = \dfrac{?}{7.5}$

(A) 5.25   (B) 0.525   (C) 4.50   (D) 4.05

Q.9 $\dfrac{(0.02)^3}{?} = \dfrac{?}{2^3}$

(A) 0.0008   (B) 0.08   (C) 8.00   (D) 0.008

Q.10 $\dfrac{0.4^2 - 0.3^2}{?} = \dfrac{?}{0.07}$

(A) 0.71   (B) 0.07   (C) 0.70   (D) 2.7

Q.11 $\dfrac{\frac{1}{25}}{?} = \dfrac{?}{\frac{1}{400}}$

(A) 0.04   (B) 4.0   (C) 4.25   (D) 0.01

Q.12 $\dfrac{\sqrt{2.56}}{?} = \dfrac{?}{0.1}$

(A) 0.04   (B) 0.004   (C) 4.0   (D) 0.4

Q.13 $\dfrac{\sqrt{0.36}}{?} = \dfrac{?}{0.006}$

(A) 0.09   (B) 0.06   (C) 0.012   (D) 0.60

Q.14 If × stands for 'addition', ÷ stands for 'subtraction', + stands for 'multiplication and − stands for 'division', then
$$20 \times 8 \div 8 - 4 + 2 = ?$$
(A) 80 (B) 25 (C) 24 (D) 5

Q.15 If − means ×, × means +, + means ÷ and ÷ means −, then
$$40 \times 12 + 3 - 6 \div 60 = ?$$
(A) 7.95 (B) 16 (C) 44 (D) none

Q.16 If + means ×, ÷ means −, × means ÷ and −means +, what will be the value of $4 + 11 \div 5 - 55 = ?$
(A) − 48.5 (B) −11 (C) 79 (D) none

Q.17 If ÷ means +, − means ÷, × means − and + means ×, then
$$\frac{(36 \times 4) - 8 \times 4}{4 + 8 \times 2 + 16 \div 1} = ?$$
(A) 0 (B) 8 (C) 12 (D) 16

Q.18 If x stands for 'add', y stands for 'subtract', z stands for 'divide and p stands for 'multiply', then what is the value of $(7\ p\ 3)\ y\ 6\ x\ 5$?
(A) 5 (B) 10 (C) 15 (D) 20

Q.19 If L denotes ×, M denotes ÷ , P denotes + and Q denotes −, then
$$16\ P\ 24\ M\ 8\ Q\ 6\ M\ 2\ L\ 3 = ?$$
(A) $\frac{13}{6}$ (B) $-\frac{1}{6}$ (C) $14\frac{1}{2}$ (D) 10

Q.20 If − means ÷, + means ×, ÷ means −, × means +, then which of the following equations is correct ?
(A) $52 \div 4 + 5 \times 8 - 2 = 36$
(B) $43 \times 7 \div 5 + 4 - 8 = 25$
(C) $36 \times 4 - 12 + 5 \div 3 = 420$
(D) $36 - 12 \times 6 \div 3 + 4 = 60$

Directions (Questions 21 to 23) :
In each of the following questions if the given interchanges are made in signs and numbers, which one of the four equations would be correct ?

Q.21 Given interchanges : Signs + and − and numbers 4 and 8
(A) $4 \div 8 - 12 = 16$ (B) $4 - 8 + 12 = 0$
(C) $8 \div 4 - 12 = 24$ (D) $8 - 4 \div 12 = 8$

Q.22 Given interchanges : Signs − and × and numbers 3 and 6
(A) $6 - 3 \times 2 = 9$ (B) $3 - 6 \times 8 = 10$
(C) $6 \times 3 - 4 = 15$ (D) $3 \times 6 - 4 = 33$

Q.23 Find out the two signs to be interchanged for making following equation correct :
$$5 + 3 \times 8 - 12 \div 4 = 3$$
(A) + and − (B) − and ÷
(C) + and × (D) + and ÷

Directions (Questions 24 to 26) :
In each of the following questions an equation becomes incorrect due to the interchange of two signs. One of the four alternatives under it specifies the interchange of signs in the equation, which when made will make the equation correct. Find the correct alternative.

Q.24 $16 + 8 \div 4 + 5 \times 2 \equiv 8$
(A) ÷ and × (B) − and ÷
(C) ÷ and + (D) − and ×

Q.25 $9 + 5 \div 4 \times 3 - 6 \equiv 12$
(A) + and × (B) ÷ and ×
(C) ÷ and − (D) + and −

Q.26 $12 \div 2 - 6 \times 3 + 8 \equiv 16$

(A) ÷ and +   (B) − and +

(C) × and +   (D) ÷ and ×

Directions (Questions 27 to 29) :

In each of the following questions, the two expressions on either side of the sign (=) will have the same value if two terms on either side or on the same side are interchanged. The correct terms to be interchanged have been given as one of the four alternatives under the expressions. Find the correct alternative in each case.

Q.27 $5 + 3 \times 6 - 4 \div 2 = 4 \times 3 - 10 + 2 + 7$

(A) 4, 7   (B) 5, 7   (C) 6, 4   (D) 6, 10

Q.28 $15 + 3 \times 4 - 8 \div 2 = 8 \times 5 + 16 \div 2 - 1$

(A) 3, 5   (B) 15, 5   (C) 15, 16   (D) 3, 1

Q.29 $8 \div 2 \times 5 - 11 + 9 = 6 \times 2 - 5 + 4 \div 2$

(A) 5, 9   (B) 8, 5   (C) 9, 6   (D) 11, 5

Directions (Questions 30 to 31) :

In each of the following questions, which one of the four interchanges in signs and numbers would make the given equation correct ?

Q.30 $6 \times 4 + 2 = 16$

(A) + and ×, 2 and 4   (B) + and ×, 2 and 6

(C) + and ×, 4 and 6   (D) None of these

Q.31 $4 \times 6 - 2 = 14$

(A) × to ÷, 2 and 4   (B) − to ÷, 2 and 6

(C) − to +, 2 and 6   (D) × to +, 4 and 6

Q.32 Which of the following conclusions is correct according to the given expressions and symbols ?

A : ≮   B : >   C : ≠   D : =

E : ≯   F : <

Expressions : (aEb) and (bEc)

(A) aEc   (B) aFc   (C) cBa   (D) cBb

Q.33 Find the correct inference according to given premises and symbols :

A : Not greater than   B : Greater than

C : Not equal to   D : Equal to

E : Not less than   F : Less than

Premises : (ℓCm) and (ℓAm)

(A) ℓBm   (B) ℓDm   (C) ℓEm   (D) ℓFm

Directions (Questions 34 to 36) :

It being given that : Δ denotes 'equal to'; □ denotes 'not equal to'; + denotes 'greater than'; − denotes 'less than', × denotes 'not greater than'; ÷ denotes 'not less than'. Choose the correct statement in each of the following questions :

Q.34 $a - b - c$ implies

(A) $a - b + c$ (B) $b + a - c$

(C) $c \times b + a$ (D) $b + a \div c$

Q.35 $a \times b \div c$ implies

(A) $a - b + c$ (B) $c \times b \div a$

(C) $a \,\square\, b \,\square\, c$ (D) $b \div a \div c$

Q.36 $a + b + c$ does not imply

(A) $b - a + c$ (B) $c - b - a$

(C) $c - a + b$ (D) $b - a - c$

Direction (Questions 37 to 38) :

If α means 'greater than', β means 'equal to', θ means 'not less than', γ means 'less than', δ means 'not equal to' and η means 'not greater than', then which of the four alternatives could be a correct or proper inference in each of the following ?

Q.37 a α 2b and 2b θ r

(A) a η r (B) a α r (C) a β r (D) a γ r

Q.38 If A stands for 'not equal to' (≠), B stands for 'greater than' (>), C stands for 'not less than' (≮), D stands for 'equal to' (=), E stands for 'not greater than' (≯), F stands for 'less than (<), then according to the given premises (4x F 5y) and (5y E 3s), which of the following inferences is correct ?

(A) 4x A 3s (B) 4x B 3s

(C) 4x C 3s   (D) 4x D 3s

Direction (Questions 39 to 40) :

In each of the follwing questions, Δ means 'is greater than', % means ' is lesser than', □ means 'is equal to' = means 'is not equal to', + means 'is a little more than', × means 'is a little less than'.

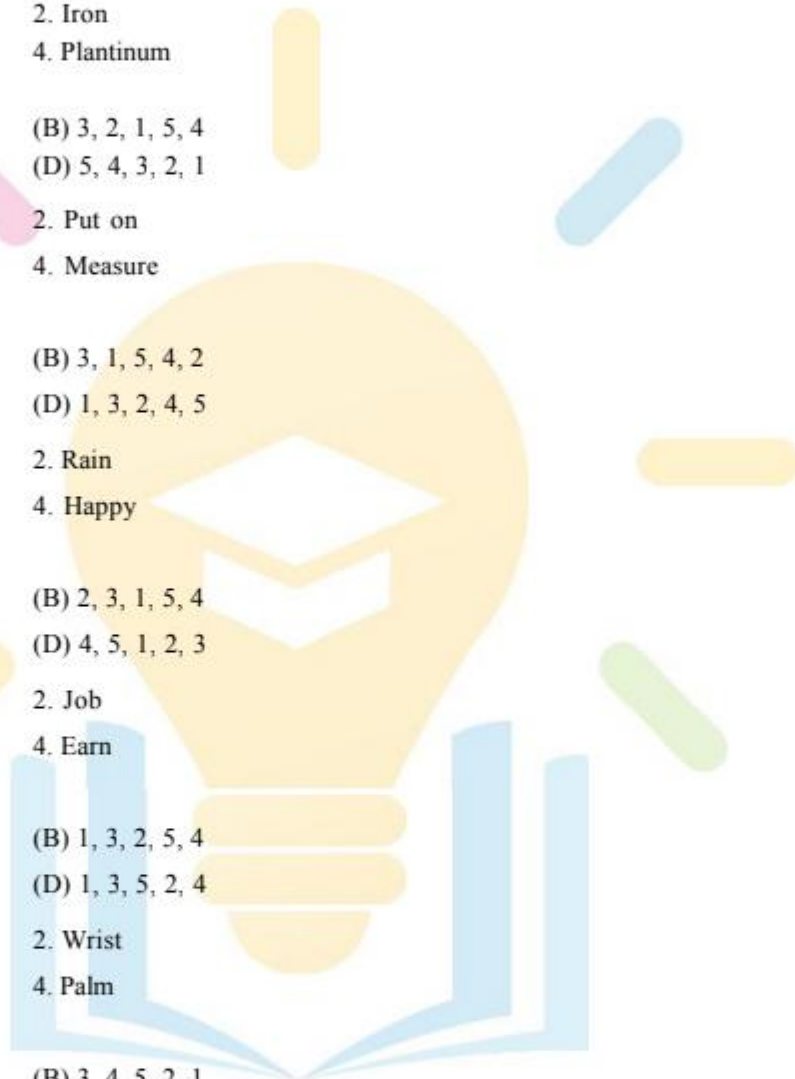Choose the correct alternative in each of the following questions.

Q.39 If a Δ b and b + c, then

(A) a % c   (B) c % a

(C) c + a   (D) can not say

Q.40 If c % b and b × a, then

(A) a Δ c   (B) c □ a

(C) b □ c   (D) c Δ a

Q.41 If + means ÷, × means −, ÷ means × and −means +, then : 8 + 6 × 4 ÷ 3 − 4 ?

(A) −12   (B) −20/3

(C) 12   (D) 20/3

Q.42 If × means ÷, −means ×, ÷ means + and + means −, then : (3 − 15 ÷ 19) × 8 + 6 = ?

(A) 8   (B) 4   (C) 2   (D) −1

Q.43 If × means +, ÷ means −, − means × and + means ÷, then : 8 × 7 − 8 + 40 ÷ 2 = ?

(A) 1   (B) $7\frac{2}{5}$ (C) $8\frac{3}{5}$ (D) 44

Q.44 If + means −, −means ×, ×means ÷ and ÷ means +, then : 15 × 3 ÷ 15 + 5 − 2 = ?

(A) 0   (B) 6

(C) 10   (D) none of these

Q.45 If × means −, + means ÷, −means × and ÷ means +, then : 15 − 2 ÷ 900 + 90 × 100 = ?

(A) 190   (B) 180

(C) 90   (D) none of these

Q.46 If + means ÷, − means ×, ÷ means −, ×means +, what will be the value of 8 + 6 ÷ 4 − 7 × 3 ?   (A)

$-\frac{71}{3}$ (B) $-\frac{23}{2}$ (C) 12   (D) 14

Q.47 If P denotes ÷, Q denotes ×, R denotes + and S denotes −, then : 18 Q 1 2 P 4 R 5 S 6 = ?

(A) 36   (B) 53   (C) 59   (D) 65

Q.48 If a means 'Plus', b means 'minus', c means 'multiplied by' and d means 'divided by', then
18c 14a 6b 16d 4 = ?

(A) 63   (B) 254

(C) 288   (D) none of these

Q.49 If A means −, B means ÷, C means + and D means ×, then :

15 B 3 C 24 A 12 D 2 = ?

(A) 34   (B) 2

(C) 5/9   (D) none of these

Q.50 If A stands for +, B stands for −,C stands for ×, then what is the value of (10 C 4) A (4 C 4) B 6?   (A) 60

(B) 56   (C) 50   (D) 46

Q.51 If × means 'addition', − means 'division', ÷ means 'subtraction' and + means 'multiplication', then which of the
following equations is correct ?   (A) $16 \times 5 \div 10 + 4 - 3 = 19$

(B) $16 + 5 \div 10 \times 4 - 3 = 9$

(C) $16 + 5 - 10 \times 4 \div 3 = 9$

(D) $16 - 5 \times 10 \div 4 + 3 = 12$

Q.52 If + stands for 'division', × stands for 'addition', − stands for 'multiplication' and ÷ stands for 'subtraction', then
which of the following equation is correct :

(A) $36 \times 6 + 7 \div 2 - 6 = 20$

(B) $36 \div 6 + 3 \times 5 - 3 = 45$

(C) $36 + 6 - 3 \times 5 \div 3 = 24$

(D) $36 - 6 + 3 \times 5 \div 3 = 74$

Q.53 If P denotes +, Q denotes −, R denotes × and S denotes ÷, which of the following statements is correct ?

(A) 36 R 4 S 8 Q 7 P 4 = 10

(B) 16 R 12 P 49 S 7 Q 9 = 200

(C) 32 S 8 R 9 = 160 Q 12 R 12

(D) 8 R 8 P 8 S 8 Q 8 = 57

Q.54 If   L   denotes   ÷,   M   denotes   ×,   P   denotes   +   and
Q denotes −, then which of the following statements is true ?

(A) $32 \text{ P } 8 \text{ L } 16 \text{ Q } 4 = -\dfrac{3}{2}$

(B) $6 \text{ M } 18 \text{ Q } 26 \text{ L } 13 \text{ P } 7 = \dfrac{173}{13}$

(C) $11 \text{ M } 34 \text{ L } 17 \text{ Q } 8 \text{ L } 3 = \dfrac{38}{3}$

(D) 9 P 9 L 9 Q M 9 = − 71

Q.55 If × stands for 'addition' , < for 'subtraction', + stands for 'division'. > 'for multiplication', − stands for 'equal
to', ÷ for 'greater than' and = stands for 'less than' state which off the following is true ?

(A) $3 \times 2 < 4 \div 16 > 2 + 4$

(B) $5 > 2 + 2 = 10 < 4 \times 8$

(C) $3 \times 4 > 2 - 9 + 3 < 3$

(D) $5 \times 3 < 7 \div 8 + 4 \times 1$

Directions (Questions 56 to 60) :

If > denotes +, < denotes −, + denotes ÷, ∧ denotes ×, − denotes =, × dentotes > and = denotes <, choose the correct statements in each of the following questions.

Q.56   (A) 6 + 3 > 8 = 4 + 2 < 1

       (B) 4 > 6 + 2 × 32 + 4 < 1

       (C) 8 < 4 + 2 = 6 > 3

       (D) 14 + 7 > 3 = 6 + 3 > 2

Q.57   (A) 14 > 18 + 9 = 16 + 4 < 1

       (B) 4 > 3 ∧ 8 < 1 − 6 + 2 > 24

       (C) 3 < 6 ∧ 4 > 25 = 8 + 4 < 1

       (D) 12 > 9 + 3 < 6 × 25 + 5 > 6

Q.58   (A) 13 > 7 < 6 + 2 = 3 ∧ 4

       (B) 9 > 5 > 4 − 18 + 9 > 16

       (C) 9 < 3 < 2 > 1 × 8 ∧ 2

       (D) 28 + 4 ∧ 2 = 6 ∧ 4 + 2

Q.59   (A) 29 < 18 + 6 = 36 + 6 ∧ 4

       (B) 18 > 12 + 4 × 7 > 8 ∧ 2

       (C) 32 > 6 + 2 = 6 < 7 ∧ 2

       (D) 31 > 1 < 2 = 4 > 6 ∧ 7

Q.60   (A) 7 > 7 < 7 + 7 = 14

       (B) 7 ∧ 7 > 7 + 7 = 7 ∧ 7 > 1

       (C) 7 < 7 + 7 = 6

       (D) 7 + 7 > 7 = 8

Directions : (Q. 61 to 80) :

In each of the following questions, arrange the given words in a meaningful sequence and then choose the most appropriate sequence from amongst the alternatives provided below each questions.

Q.61   1. Birth   2. Death

       3. Funeral   4. Marriage

       5. Education

       (A) 4, 5, 3,1, 2   (B) 2, 3, 4, 5, 1

       (C) 1, 5, 4, 2, 3   (D) 1, 3, 4, 5, 2

Q.62   1. Site   2. Plan

       3. Rent   4. Money

       5. Building

       (A) 4, 1, 2, 5, 3   (B) 3, 4, 2, 5, 1

       (C) 2, 3, 5, 1, 4   (D) 1, 2, 3, 5, 4

Q.63   1. Table   2. Tree

       3. Wood   4. Seed

       5. Plant

       (A) 4, 5, 3, 2, 1   (B) 4, 5, 2, 3, 1

       (C) 1, 3, 2, 4, 5   (D) 1, 2, 3, 4, 5

Q.64   1. College   2. Child

       3. Salary   4. School

       5. Employment

	(A) 1, 2, 4, 3, 5	(B) 2, 4, 1, 5, 3
	(C) 4, 1, 3, 5, 2	(D) 5, 3, 2, 1, 4

Q.65
1. Reading   2. Composing
3. Writing   4. Printing
(A) 1, 3, 2, 4   (B) 2, 3, 4, 1
(C) 3, 1, 2, 4   (D) 3, 2, 4, 1

Q.66
1. Cutting   2. Dish
3. Vegetable   4. Market
5. Cooking
(A) 1, 2, 4, 5, 3   (B) 3, 2, 5, 1, 4
(C) 4, 3, 1, 5, 2   (D) 5, 3, 2, 1, 4

Q.67
1. Income   2. Status
3. Education   4. Well-being
5. Job
(A) 1, 3, 2, 5, 4   (B) 1, 2, 5, 3, 4
(C) 2, 3, 4, 5, 1   (D) 3, 5, 1, 2, 4

Q.68
1. Milky way   2. Sun
3. Moon   4. Earth
5. Stars
(A) 4, 3, 2, 5, 1   (B) 3, 4, 2, 5, 1
(C) 2, 3, 4, 5, 1   (D) 1, 4, 3, 3, 2, 5

Q.69
1. Sea   2. Rivulet
3. Ocean   4. River
5. Glacier
(A) 5, 4, 3, 2, 1   (B) 5, 4, 2, 3, 1
(C) 5, 2, 4, 1, 3   (D) 5, 2, 1, 3, 4

Q.70
1. Poverty   2. Population
3. Death   4. Unemployment
5. Disease
(A) 3, 4, 2, 5, 1   (B) 2, 4, 1, 5, 3
(C) 2, 3, 4, 5, 1   (D) 1, 2, 3, 4, 5

Q.71
1. Yarn   2. Plant
3. Saree   4. Cotton
5. Cloth
(A) 2, 4, 1, 5, 3   (B) 2, 4, 3, 5, 1
(C) 2, 4, 5, 1, 3   (D) 2, 4, 5, 3, 1

Q.72
1. Puberty   2. Adulthood
3. Childhood   4. Infancy
5. Senescence
(A) 5, 2, 3, 4, 1   (B) 4, 3, 2, 1, 5
(C) 4, 3, 1, 2, 5   (D) 2, 4, 3, 1, 5

Q.73
1. Windows   2. Walls
3. Floor   4. Foundation
5. Roof
(A) 4, 5, 3, 2, 1, 6   (B) 4, 3, 5, 6, 2, 1
(C) 4, 2, 1, 5, 3, 6   (D) 4, 1, 5, 8, 2, 3

Q.74   1. Post-box   2. Letter
3. Envelope   4. Delivery
5. Clearance
(A) 3, 2, 4, 5, 1   (B) 3, 2, 1, 5, 4
(C) 3, 2, 1, 4, 5   (D) 2, 3, 1, 4, 5

Q.75   1. Key   2. Door
3. Lock   4. Room
5. Switch on
(A) 5, 1, 2, 4, 3   (B) 4, 2, 1, 5, 3
(C) 1, 2, 3, 5, 4   (D) 1, 3, 2, 4, 5

Q.76   1. Gold   2. Iron
3. Sand   4. Plantinum
5. Diamond
(A) 2, 4, 3, 5, 1   (B) 3, 2, 1, 5, 4
(C) 4, 5, 1, 3, 2   (D) 5, 4, 3, 2, 1

Q.77   1. Cut   2. Put on
3. Mark   4. Measure
5. Tailor
(A) 4, 3, 1, 5, 2   (B) 3, 1, 5, 4, 2
(C) 2, 4, 3, 1, 5   (D) 1, 3, 2, 4, 5

Q.78   1. Rainbow   2. Rain
3. Sun   4. Happy
5. Child
(A) 2, 1, 4, 3, 5   (B) 2, 3, 1, 5, 4
(C) 4, 2, 3, 5, 1   (D) 4, 5, 1, 2, 3

Q.79   1. Study   2. Job
3. Examination   4. Earn
5. Apply
(A) 1, 2, 3, 4, 5   (B) 1, 3, 2, 5, 4
(C) 1, 3, 5, 4, 2   (D) 1, 3, 5, 2, 4

Q.80   1. Shoulder   2. Wrist
3. Elbow   4. Palm
5. Finger
(A) 5, 4, 2, 3, 1   (B) 3, 4, 5, 2, 1
(C) 3, 1, 4, 2, 5   (D) 2, 4, 5, 3, 1

ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Ans.	C	D	C	D	C	D	C	C	D	B	D	D	B	C	D	D	A	D	D	A	B	B	B	B	C
Ques.	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Ans.	B	C	A	C	C	C	A	D	B	B	D	B	A	B	A	B	C	B	C	D	A	B	B	D	C
Ques.	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Ans.	C	D	D	D	B	C	B	B	D	A	C	A	B	B	D	C	D	B	C	B	A	C	C	B	D
Ques.	76	77	78	79	80																				
Ans.	B	A	B	D	A																				

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HINTS & SOLUTION

Q.41 Using the correct symbols, we have :

Given expression

$= 8 \div 6 - 4 \times 3 + 4$

$= \dfrac{4}{3} - 4 \times 3 + 4 = \dfrac{4}{3} - 12 + 4 = \dfrac{-20}{3}$

Q.42 Using the correct symbols, we have :

Given expression

$= (3 \times 15 + 19) \div 8 - 6$

$= (45 + 19) \div 8 - 6 = 64 \div 8 - 6 = 8 - 6 = 2$

Q.43 Using the correct symbols, we have :

Given expression :

$= 8 + 7 \times 8 \div 40 - 2$

$= 8 + 7 \times \dfrac{1}{5} - 2 = 8 + \dfrac{7}{5} - 2 = \dfrac{37}{5} = 7\dfrac{2}{5}$

Q.44 Using the correct symbols, we have :

Given expression :

$15 \div 3 + 15 - 5 \times 2$

$= 5 + 15 - 5 \times 2 = 5 + 15 - 10 = 10.$

Q.45 Using the correct symbols, we have :

Given expression :

$15 \times 2 + 900 \div 90 - 100$

$= 15 \times 2 + 10 - 100 = 30 + 10 - 100 = -60$

Q.46 Using the correct symbols, we have :

Given expression

$= 8 \div 6 - 4 \times 7 + 3$

$= \dfrac{4}{3} - 4 \times 7 + 3 = \dfrac{4}{3} - 28 + 3 = -\dfrac{71}{3}$

Q.47 Using the correct symbols, we have :

Given expression :

$18 \times 12 \div 4 + 5 - 6$

$= 18 \times 3 + 5 - 6 = 54 + 5 - 6 = 53$

Q.48 Using the correct symbols, we have :

Given expression

$18 \times 14 + 6 - 16 \div 4$

$= 18 + 14 + 6 - 4 = 252 + 6 - 4 = 254$

Q.49 Using the correct symbols, we have :

Given expression :

$= 15 \div 3 + 24 - 12 \times 2$

$= 5 + 24 - 12 \times 2 = 5 + 24 - 24 = 5$

Q.50 Using the correct symbols, we have :
Given expression :
$(10 \times 4) + (4 \times 4) - 6 = 40 + 16 - 6 = 50$

Q.51 Using the proper notations in (C), we get the statements as :
$16 \times 5 \div 10 + 4 - 3 = 16 \times \dfrac{1}{2} + 4 - 3 = 8 + 4 - 3 = 9$

Q.52 Using the proper notations in (D), we get the statements as :
$36 \times 6 \div 3 + 5 - 3 = 36 \times 2 + 5 - 3 = 72 + 5 - 3 = 74$

Q.53 Using the proper notations in (D), we get the statements as :
$8 \times 8 + 8 \div 8 - 8 = 8 \times 8 + 1 - 8 = 64 + 1 - 8 = 57$

Q.54 Using the proper notations in (D), we get the statements as :
$9 \div 9 \div 9 - 9 \times 9 = 9 + 1 - 9 \times 9$
$= 9 + 1 - 81 = -71$

Q.55 Using the proper notations in (B), we get the statements as :
$5 \times 2 \div 2 < 10 - 4 + 8$ or $5 < 14$, which is true.

Q.56 Using the proper notations in (C), we get the statements as :
$8 - 4 \div 2 < 6 + 3$ or $6 < 9$. which is true.

Q.57 Using the proper notations in (D), we get the statements as :
$4 + 3 \times 8 - 1 = 6 \div 2 + 24$ or $27 = 27$, which is true.

Q.58 Using the proper notations in (B), we get the statements as :
$9 + 5 + 4 = 18 \div 9 + 16$ or $18 = 18$, which is true.

Q.59 Using the proper notations in (D), we get the statements as :
$31 + 1 - 2 < 4 + 6 \times 7$ or $30 < 46$, which is true.

Q.60 Using the proper notations in (A), we get the statements as :
$7 + 7 - 7 \div 7 < 14$ or $13 < 14$, which is true.