# SSC CHSL 21 March 2018 Morning Shift

# Quant

**Instructions**

For the following questions answer them individually

**Question 1**

Find the remainder in the expression $\frac{557 \times 653 \times 672}{9}$

A    0

B    3

C    5

D    6

   **Answer:** D

**Explanation:**

Expression : $\frac{557 \times 653 \times 672}{9}$

When we divide 557 by 9, remainder is $(5 + 5 + 7)\%9 = 17\%9 = 8$

Similarly, $653\%9 = 5$ and $672\%9 = 6$

=> Remainder of expression $= \frac{8 \times 5 \times 6}{9} = 240\%9$

$= (2 + 4 + 0)\%9 = 6$

=> Ans - (D)

**Question 2**

Calculate the value of x, If $\sqrt{1 - (\frac{x}{529})} = (\frac{16}{23})$

A    283

B    276

C    273

D    374

   **Answer:** C

**Explanation:**

Expression : $\sqrt{1 - (\frac{x}{529})} = (\frac{16}{23})$

$$\Rightarrow \sqrt{\frac{529-x}{529}} = \frac{16}{23}$$

$$\Rightarrow \frac{529-x}{529} = \left(\frac{16}{23}\right)^2$$

$$\Rightarrow \frac{529-x}{529} = \frac{256}{529}$$

$$\Rightarrow 529 - x = 256$$

$$\Rightarrow x = 529 - 256 = 273$$

=> Ans - (C)

## Question 3

**How many solutions does a pair of linear equations will have, if the equations are 4x+5y-6=0 and 16x+20y+20=0?**

**A**   0

**B**   1

**C**   2

**D**   Infinite

   **Answer:** A

**Explanation:**

Equations : $4x + 5y - 6 = 0$   and   $16x + 20y + 20 = 0$

The ratio of coefficients is $= \frac{4}{16}, \frac{5}{20}, \frac{-6}{20}$

$\Rightarrow \frac{1}{4} = \frac{1}{4} \ne \frac{-3}{10}$

$\because \frac{a_1}{a_2} = \frac{b_1}{b_2} \ne \frac{c_1}{c_2}$, thus the equations have no solutions.

=> Ans - (A)

## Question 4

**Determine the value of m for which** $4x + \frac{\sqrt{x}}{6} + \frac{m^2}{4}$ **is a perfect square.**

**A**   $\frac{1}{24}$

**B**   $\frac{1}{12}$

**C**   $12$

**D**   $24$

   **Answer:** B

**Explanation:**

Expression : $4x + \frac{\sqrt{x}}{6} + \frac{m^2}{4}$

Let $\sqrt{x} = y$

$= 4y^2 + \frac{y}{6} + \frac{m^2}{4}$

$= (2y)^2 + 2(2y)(\frac{1}{24}) + (\frac{m}{2})^2$

Using, $a^2 + 2ab + b^2 = (a+b)^2$

$\Rightarrow \frac{m}{2} = \frac{1}{24}$

$\Rightarrow m = \frac{2}{24} = \frac{1}{12}$

=> Ans - (B)

**Question 5**

**Consider the circle as shown in the figure and choose CORRECT option for this case.**
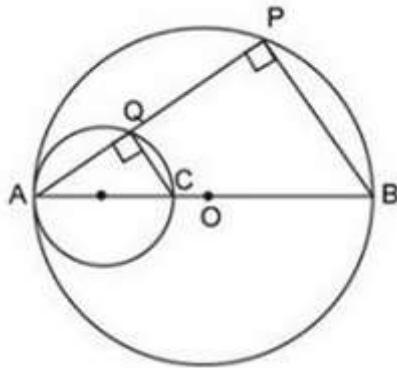


**A** $QC \parallel PB$

**B** QC is never parallel to PB

**C** $QC = \frac{1}{2}PB$

**D** $QC\ parallel PB\ QC = \frac{1}{2}PB$

   **Answer:** C

**Question 6**

**The angle subtended by the chord of length 10 cm is 120° at the centre. Calculate the distance of the (in cm) from the centre.**

**A** $\frac{5}{\sqrt{3}}$

**B** $\frac{6}{\sqrt{3}}$

**C**   $\frac{4}{\sqrt{3}}$

**D**   $\frac{5}{2\sqrt{3}}$

    **Answer:** A

**Explanation:**
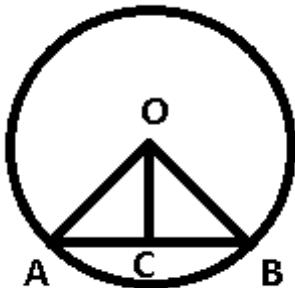


Given : ∠AOB = 120° and AB = 10 cm

To find : OC = ?

Solution : Perpendicular from the centre to the chord bisects the chord, => AC = CB $\frac{10}{2} = 5$cm

Also, ∠ AOC =∠ COB = $\frac{120}{2} = 60°$

Thus, in △ BOC,

=> $tan(\angle COB) = \frac{BC}{OC}$

=> $tan(60°) = \frac{5}{OC}$

=> $OC = \frac{5}{\sqrt{3}}$ cm

=> Ans - (A)

**Question 7**

**If P : Q = 9 : 7, then what is the value of (P - Q) : (P + Q)?**

**A**   1 : 2

**B**   1 : 8

**C**   1 : 4

**D**   2 : 13

    **Answer:** B

**Explanation:**
Given = $P : Q = 9 : 7$

Let $P = 9$ and $Q = 7$

To find = $\frac{P-Q}{P+Q}$

$$= \frac{9-7}{9+7}$$

$$= \frac{2}{16} = \frac{1}{8}$$

$\therefore$ Required ratio = $1 : 8$

=> Ans - (B)

## Question 8

**How much quantity (in kg) of wheat costing Rs 84 per kg must be mixed with 81 kg of wheat costing Rs per kg so that on selling the mixture at Rs 75.9 per kg, there is a gain of 15%?**

**A** 27

**B** 20.5

**C** 22.75

**D** 24

**Answer:** A

**Explanation:**

Let $x$ kg of Rs. 84/kg of wheat is mixed with 81 kg of wheat costing Rs. 60 /kg

Selling price after 15% profit = Rs. 75.9

=> Cost price of the mixture = $\frac{75.9}{(100+15)} \times 100$

$= \frac{7590}{115} = Rs. 66$

According to ques,

$=> 84(x) + 60(81) = 66(x + 81)$

$=> 84x + 4860 = 66x + 5346$

$=> 84x - 66x = 5346 - 4860$

$=> 18x = 486$

$=> x = \frac{486}{18} = 27$

$\therefore$ **27 kg** of wheat is required.

=> Ans - (A)

## Question 9

**The average height of A, B and C is 148 cm. If the average height of A and B is 136 cm and that of B and is 125 cm, then what is the height (in cm) of B?**

**A** 56

**B** 78

**C** 112

**D** 130

Answer: B

**Explanation:**

Let height of A, B and C be $a, b, c$ cm respectively.

Average height of A, B and C $= \frac{(a+b+c)}{3} = 148$

$=> a + b + c = 148 \times 3 = 444$ ------------(i)

Also, average height of A and B $= \frac{(a+b)}{2} = 136$

$=> a + b = 272$ ------------(ii)

Similarly, $b + c = 250$ -----------(iii)

Adding equations (ii) and (iii), $=> a + 2b + c = 522$ ----------(iv)

Subtracting equation (i) from (iv), we get :

$=> b = 522 - 444 = 78$

$\therefore$ Height of B = **78** cm

=> Ans - (B)

**Question 10**

**Some part of Rs 17500 was lent at the rate of 24% per annum simple interest and the remaining part at rate of 10% per annum simple interest. The total interest received after 5 years is Rs 13300. What is the ratio of money lent at the rate of 24% and 10%?**

**A** 12 : 13

**B** 3 : 4

**C** 3 : 2

**D** 13 : 22

Answer: D

**Explanation:**

Let sum lent for 24% = Rs.$100x$ and sum lent for 10% = Rs.$(17500 - 100x)$

Time period = 5 years

=> Simple interest $= \frac{P \times R \times T}{100}$

According to ques,

=> $\frac{100x \times 24 \times 5}{100} + \frac{(17500-100x) \times 10 \times 5}{100} = 13300$

=> $120x + (175 - x) \times 50 = 13300$

=> $120x + (175 \times 50) - 50x = (175 \times 76)$

=> $70x = 175(76 - 50)$

=> $x = \frac{175 \times 26}{70} = 65$

$\therefore$ Required ratio $= \frac{100 \times 65}{17500 - (100 \times 65)}$

$= \frac{6500}{11000} = \frac{65}{110} = 13 : 22$

=> Ans - (D)

## Question 11

**If 60% of total articles are sold at a loss of 50% and remaining articles are sold at a profit of 50%, then will be the overall loss percentage?**

**A** 20

**B** 15

**C** 25

**D** 10

   **Answer:** D

**Explanation:**
Let total articles = 100 and price of all the articles = Rs. 100

Number of articles sold at 50% loss $= \frac{60}{100} \times 100 = 60$

Selling price of these articles $= 60 - (\frac{50}{100} \times 60)$

$= 60 - 30 = Rs. 30$

Similarly, selling price of (remaining 40) articles sold at 50% profit $= 40 + (\frac{50}{100} \times 40)$

$= 40 + 20 = Rs. 60$

Thus, net selling price = Rs. 90

$\therefore$ Overall loss % $= \frac{(100-90)}{100} \times 100 = 10\%$

=> Ans - (D)

**Question 12**

If three successive discounts of 20%, 30% and 40% are given, then what will be the net discount (in percentage)?

A   80

B   87.6

C   90

D   66.4

   **Answer:** D

**Explanation:**
Let marked price = Rs.100

After 1st discount of 20%, price $= 100 - (\frac{20}{100} \times 100)$

$= 100 - 20 = 80$

After 2nd discount of 30% (on changed price), selling price $= 80 - (\frac{30}{100} \times 80)$

$= 80 - 24 = Rs.\ 56$

After 3rd discount of 40%, net selling price $= 56 - (\frac{40}{100} \times 56)$

$= 56 - 22.4 = Rs.\ 33.6$

$\therefore$ Net discount $= \frac{(100-33.6)}{100} \times 100 = 66.4\%$

=> Ans - (D)

**Question 13**

Which of the following statement (s) is / are TRUE ?

I. $\sqrt{676} + \sqrt{6.76} + \sqrt{0.0676} = 27.76$

II. $\sqrt{339} + \sqrt{36} + \sqrt{49} + \sqrt{81} = 19$

A   Only I

B   Only II

C   Neither I nor II

D   Both I and II

   **Answer:** B

**Explanation:**

$I : \sqrt{676} + \sqrt{6.76} + \sqrt{0.0676} = 27.76$

L.H.S. $= 26 + 2.6 + 0.26 = 28.86 \neq$ R.H.S.

II : $\sqrt{339} + \sqrt{36} + \sqrt{49} + \sqrt{81} = 19$

L.H.S. $= \sqrt{339 + 6 + 7 + 9} = \sqrt{361} = 19 =$ R.H.S.

Thus, only II is correct.

=> Ans - (B)

## Question 14

**R is 80% more efficient than S. If S alone can make a book in 90 days, then R alone can make the book in how many days?**

**A** 65

**B** 60

**C** 50

**D** 70

**Answer:** C

**Explanation:**

Let total work to be done = 900 units

S alone can make a book in 90 days, => S's efficiency $\frac{900}{90} = 10$ units/day

=> R's efficiency $= 10 + (\frac{80}{100} \times 10) = 18$ units/day

$\therefore$ Time taken by R alone to make the book $= \frac{900}{18} = 50$ days

=> Ans - (C)

## Question 15

**Diameter of a car wheel is 21 cm. A car driver moving at the speed of 66 km/hr takes 36 seconds to destination. How many revolutions will the wheel make during the journey?**

**A** 1800

**B** 1500

**C** 1200

**D** 1000

**Answer:** D

**Explanation:**

Diameter of wheel = 21 cm

=> Circumference of wheel = Distance travelled in 1 revolution $2\pi r$

$= 2 \times \frac{22}{7} \times \frac{21}{2} = 66$cm

Speed of car = 66 km/hr $=(66 \times \frac{5}{18}) = \frac{55}{3}$m/s

Total distance travelled by car $=\frac{55}{3} \times 36 = 660$ m $= 66000$cm

$\therefore$ Total revolutions taken by the wheel $= \frac{66000}{66} = 1000$

=> Ans - (D)

**Question 16**

**What is the value of 88% of 1125 + 20% of 425?**

**A**   1025

**B**   1125.2

**C**   1075

**D**   1055

   **Answer:** C

**Explanation:**

Expression = 88% of 1125 + 20% of 425

$=> (\frac{88}{100} \times 1125) +( \frac{20}{100} \times 425)$

$=> 990 + 85 = 1075$

=> Ans - (C)

**Instructions**

The HR department of a company prepared a report. The pie chart from this report shows number of employees in all the departments that the company has. Study the diagram and answer the following questions.
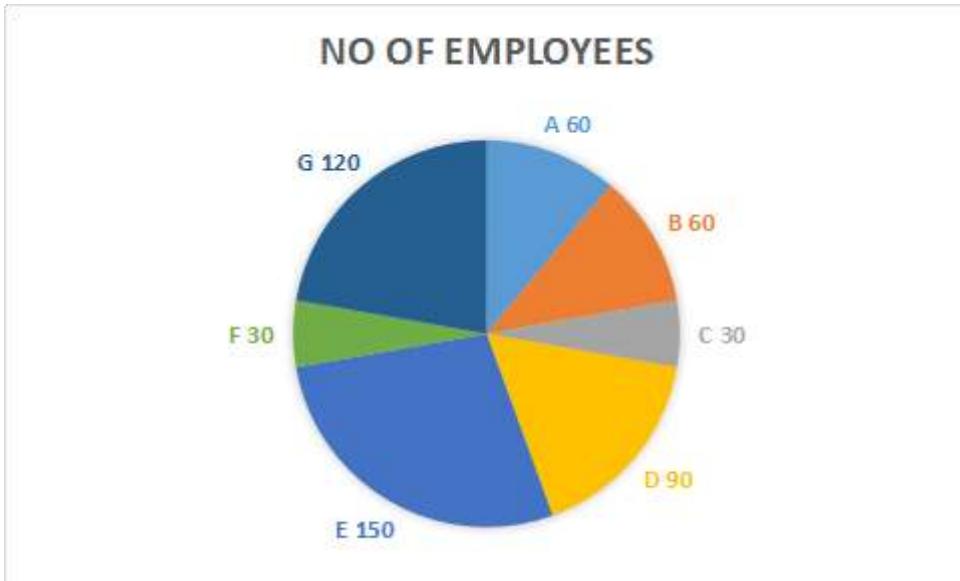
NO OF EMPLOYEES

**Question 17**

**The most number of employees belong to which department?**

**A** E

**B** F

**C** G

**D** A

   **Answer:** A

**Explanation:**

The most number of employees belong to department **E** = 150

=> Ans - (A)

**Question 18**

**What is the total number of employees of the company?**

**A** 400

**B** 600

**C** 480

**D** 540

   **Answer:** D

**Explanation:**

Total number of employees of the company

= 60 + 60 + 30 + 90 + 150 + 30 + 120

= 540

=> Ans - (D)

**Question 19**

**The measure of the central angle of the sector representing department B is _____ degrees.**

**A**   30

**B**   40

**C**   50

**D**   60

   **Answer:** B

**Explanation:**
Number of employees in department B = 60

Total number of employees of the company

= 60 + 60 + 30 + 90 + 150 + 30 + 120 = 540

=> Required central angle $=\frac{60}{540} \times 360°$

$= \frac{60}{1.5} = 40°$

=> Ans - (B)

**Question 20**

**If the average monthly salary of the employees of this company is Rs 20,000 then what is the total of the salaries (in Rs lakhs) paid to all the employees of this company?**

**A**   112

**B**   120

**C**   124

**D**   108

   **Answer:** D

**Explanation:**
Total number of employees of the company

= 60 + 60 + 30 + 90 + 150 + 30 + 120 = 540

Average monthly salary of the employees of this company = Rs 20,000

∴ Total salaries paid to all the employees of this company = $540 \times 20,000 = Rs. 108,00,000$

= Rs. 108 lakhs

=> Ans - (D)

**Instructions**

For the following questions answer them individually

**Question 21**

**The area of an equilateral triangle is** $49\sqrt{3}cm^2$. **Find its side (in cm).**

**A** 7

**B** 14

**C** 28

**D** 42

    **Answer:** B

**Explanation:**

Let side of equilateral triangle $= s$ cm

Area of equilateral triangle $= \frac{\sqrt{3}}{4}(s)^2 = 49\sqrt{3}$

$=> s^2 = 49 \times 4$

$=> s = \sqrt{7 \times 7 \times 2 \times 2}$

$=> s = 7 \times 2 = 14$   cm

=> Ans - (B)

**Question 22**

**What is the measure of an exterior angle of a regular polygon of 6 sides?**

**A** $45°$

**B** $60°$

**C** $40°$

**D** $36°$

    **Answer:** B

**Explanation:**

Sum of exterior angles of any polygon = $360°$

=> Measure of an exterior angle of a regular polygon of 6 sides = $\frac{360°}{6} = 60°$

=> Ans - (B)

**Question 23**

**The total surface area of a hemisphere is $1039.5 cm^2$. Find its diameter (in cm).**

**A** 21

**B** 10.5

**C** 42

**D** 31.5

  **Answer:** A

**Explanation:**

Let radius of hemisphere = $r$ cm

Total surface area = $3\pi r^2 = 1039.5$

=> $3 \times \frac{22}{7} \times r^2 = 1039.5$

=> $r^2 = 1039.5 \times \frac{7}{66} = 15.75 \times 7$

=> $r = \sqrt{110.25} = 10.5$

∴ Diameter = $2 \times 10.5 = 21$ cm

=> Ans - (A)

**Question 24**

**ΔDEF is right angled at E. If m∠F = $30°$, then find the value of $(cosD - \frac{1}{\sqrt{2}})$**

**A** $\frac{-1}{2}$

**B** $\frac{(\sqrt{6}-1)}{\sqrt{3}}$

**C** $\frac{(\sqrt{2}-2)}{2\sqrt{2}}$

**D** $\sqrt{3} - 2$

  **Answer:** C

**Explanation:**
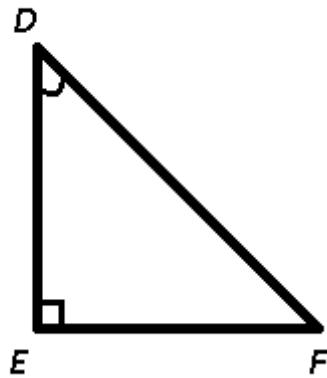


Sum of angles of $\triangle$ DEF $= \angle D + \angle E + \angle F = 180$ °

$=> \angle D + 90$ ° $+ 30° = 180°$

$=> \angle D = 180$ ° $- 120° = 60°$

To find : $(cosD - \frac{1}{\sqrt{2}})$

$= cos(60$°$) - \frac{1}{\sqrt{2}}$

$= \frac{1}{2} - \frac{1}{\sqrt{2}}$

$= \frac{(\sqrt{2}-2)}{2\sqrt{2}}$

$=>$ Ans - (C)

**Question 25**

**In ΔPQR measure of angle Q is**$90°$**. If** $tanP = \frac{24}{7}$ **, and PQ = 14cm, then what is the length (in cm) of side QR?**

**A**  50

**B**  20

**C**  26

**D**  48

   **Answer:** D

**Explanation:**
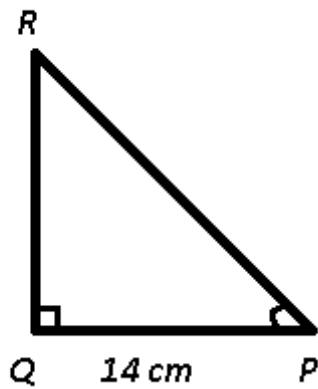
Given : PQ = 14 cm and $\tan P = \frac{24}{7}$

To find : QR = ?

Solution : In right $\triangle$ PQR,

$\Rightarrow \tan(P) = \frac{QR}{PQ}$

$\Rightarrow \frac{24}{7} = \frac{QR}{14}$

$\Rightarrow QR = \frac{24}{7} \times 14 = 48$ cm

$\Rightarrow$ Ans - (D)

# Reasoning

**Instructions**
For the following questions answer them individually

**Question 26**

**In the following question, select the related word pair from the given alternatives.**
**Rabbit : Animal : : ? : ?**

**A**   Sun : Moon

**B**   Pentagon : Figure

**C**   Lion : Bird

**D**   Animal : Cow

   **Answer:** B

**Explanation:**
Expression = Rabbit : Animal : : ? : ?

The second comes under the category of first, i.e. rabbit is an animal, similarly pentagon is a 5 sided

=> Ans - (B)

## Question 27

**In the following question, select the related number pair from the given alternatives.**
**63 : 36 : : ? : ?**

**A**   94 : 49

**B**   35 : 54

**C**   47 : 72

**D**   73 : 39

   **Answer:** A

**Explanation:**
Expression = 63 : 36 : : ? : ?

The pattern followed is that second number is the reverse of the first number.

So, in the given pairs only **94 : 49** satisfies above condition, since 49 is reverse of 94.

=> Ans - (A)

## Question 28

**In the following question, select the related letter/letters from the given alternatives.**
**ACD : ZXW : : PMN : ?**

**A**   LMN

**B**   MPN

**C**   KOP

**D**   KNM

   **Answer:** D

**Explanation:**
Expression = ACD : ZXW : : PMN : ?

The pattern followed is that each letter is replaced by the letter at its position, when the alphabets are reversed, i.e. first is replaced by last, second by second last and so on.

ABCDEFGHIJKLMNOPQRSTUVWXYZ

ZYXWVUTSRQPONMLKJIHGFEDCBA

A -> Z , C -> X , D -> W

Similarly, **PMN : KNM**

=> Ans - (D)

## Question 29

**In the following question, select the odd word from the given alternatives.**

**A** Rhombus

**B** Cylinder

**C** Cone

**D** Sphere

**Answer:** A

**Explanation:**

Cylinder, cone and sphere are 3-D figures, while a rhombus is a 2 dimension figure, hence it is the odd out.

=> Ans - (A)

## Question 30

**In the following question, four number pairs are given. The number on left side of (-) is related to the number on the right side of (-) with some Logic/Rule/Relation. Three are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given options.**

**A** 14 - 18

**B** 42 - 46

**C** 22 - 28

**D** 24 - 28

**Answer:** C

**Explanation:**

The difference between each of the pair of numbers is 4.

But in the third option =>$28 - 22 = 6$

Thus, (22 - 28) is the odd one out.

=> Ans - (C)

**Question 31**

**In the following question, select the odd letter/letters from the given alternatives.**

**A**   UQMI

**B**   SOKG

**C**   MIEB

**D**   PLHD

   **Answer:** C


**Explanation:**

(A) : U (-4 letters) = Q (-4 letters) = M (-4 letters) = I

(B) : S (-4 letters) = O (-4 letters) = K (-4 letters) = G

(C) : M (-4 letters) = I (-4 letters) = E (**-3** letters) = B

(D) : P (-4 letters) = L (-4 letters) = H (-4 letters) = D

=> Ans - (C)

**Question 32**

**Arrange the given words in the sequence in which they occur in the dictionary.**
**1. Exception**
**2. Exceptional**
**3. Exchanging**
**4. Exchanged**
**5. Excess**


**A**   12543

**B**   21453

**C**   42531

**D**   32154

   **Answer:** A


**Explanation:**
As per the order of dictionary :

= Exception -> Exceptional -> Excess -> Exchanged -> Exchanging

≡ 12543

=> Ans - (A)

**Question 33**

**In the following question, select the missing number from the given series.**
**11, 13, 17, 19, 23, ?**

**A**  29

**B**  27

**C**  31

**D**  37

   **Answer:** A

**Explanation:**
Series : 11, 13, 17, 19, 23, ?

The above series is a pattern of consecutive prime numbers.

Thus, the next prime number after 23 = **29**

=> Ans - (A)

**Question 34**

**A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.**
**BEG, DGI, FIK, HKM, ?**

**A**  JNP

**B**  NMO

**C**  JMO

**D**  KLO

   **Answer:** C

**Explanation:**
Series : BEG, DGI, FIK, HKM, ?

The pattern followed in each letter of the terms is :

1st letter : B (+2 letters) = D (+2 letters) = F (+2 letters) = H (+2 letters) = J

2nd letter : E (+2 letters) = G (+2 letters) = I (+2 letters) = K (+2 letters) = M

3rd letter : G (+2 letters) = I (+2 letters) = K (+2 letters) = M (+2 letters) = O

Thus, missing term = **JMO**

=> Ans - (C)

## Question 35

**Saurav, Mohit, Mukesh, Sumit and Bhim are arranged in descending order of their height from top to bottom. Saurav is at third place. Bhim is between Sumit and Saurav while Sumit is not at the top end. at second place from the top?**

**A**    Mohit

**B**    Mukesh

**C**    Bhim

**D**    Cannot be determined

   **Answer:** D

**Explanation:**
Saurav is at third place and they are standing in descending order.

Bhim is between Sumit and Saurav while Sumit is not at the top end, => Sumit is at the bottom.

| | | Saurav | Bhim | Sumit |
|---|---|---|---|---|
| | | | | |

Also, position of Mukesh and Mohit is unknown.

Thus, the final arrangement is :

| Mukesh/Mohit | Mohit/Mukesh | Saurav | Bhim | Sumit |
|---|---|---|---|---|

∵ Second place from top cannot be determined.

=> Ans - (D)

## Question 36

**From the given alternatives, select the word which CANNOT be formed using the letters of the given Contemptuous**

**A**    Con

**B**    Tom

**C**   Pretty

**D**   Post

   **Answer:** C

**Explanation:**
The word CONTEMPTUOUS does not contain any 'R' or 'Y', thus the term **Pretty** cannot be formed.

=> Ans - (C)

**Question 37**

**In a certain code language, "DRAPE" is written as "IWFUJ". How is "RIGID" written in that code**

**A**   CPLPK

**B**   RVCVB

**C**   WNLNI

**D**   GTATK

   **Answer:** C

**Explanation:**
"DRAPE" is written as "IWFUJ"

The pattern followed is :

| D | R | A | P | E |
|------|------|------|------|------|
| (+5) | (+5) | (+5) | (+5) | (+5) |
| I | W | F | U | J |

Similarly, for RIGID :

| R | I | G | I | D |
|------|------|------|------|------|
| (+5) | (+5) | (+5) | (+5) | (+5) |
| W | N | L | N | I |

=> Ans - (C)

**Question 38**

**In a certain code language, 'x' represents '+', '÷' represents 'x', '-' represents '÷' and '+' represents '-'. Find the answer to the following question.**
**4 x 18 ÷ 5 - 10 + 8 = ?**

**A**   35

**B**   22

**C** 5

**D** 42

   **Answer:** C

**Explanation:**
Expression : 4 x 18 ÷ 5 - 10 + 8 = ?

$\equiv 4 + 18 \times 5 \div 10 - 8$

$= 4 + \frac{90}{10} - 8$

$= 9 - 4 = 5$

=> Ans - (C)

**Question 39**

**The following equation is incorrect. Which two signs should be interchanged to correct the equation?**
**12 - 16 x 25 ÷ 80 + 10 = 7**

**A**   ÷ and x

**B**   - and +

**C**   x and -

**D**   ÷ and -

   **Answer:** B

**Explanation:**
Expression : 12 - 16 x 25 ÷ 80 + 10 = 7

(A) : ÷ and x

L.H.S. $= 12 - 16 \div 25 \times 80 + 10$

$= 12 - 51.2 + 10 = -29.2 \quad \neq$ R.H.S.

(B) : - and +

L.H.S. $= 12 + 16 \times 25 \div 80 - 10$

$= 12 + (\frac{25}{5}) - 10 = 7 =$ R.H.S.

=> Ans - (B)

**Question 40**

**If** $6\alpha1 = 70, 2\alpha3 = 50$ **and** $4\alpha5 = 90$ **, then find the value of** $4\alpha1 = ?$

**A** 50

**B** 30

**C** 10

**D** 60

   **Answer:** A

**Explanation:**
Given : $6\alpha1 = 70, 2\alpha3 = 50$ and $4\alpha5 = 90$

If we replace $'\alpha'$ with '+', and multiply the sum by 10, we get the desired result.

Eg :- $(6 + 1) \times 10 = 70$

and $(2 + 3) \times 10 = 50$ and $(4 + 5) \times 10 = 90$

Similarly, $(4 + 1) \times 10 = 50$

=> Ans - (A)

**Question 41**

**Which of the following terms follows the trend of the given list?**
**BAAAAAAB, ABAAAAAB, AABAAAAB, AAABAAAB, AAAABAAB, _____.**

**A** AAAAABAB

**B** AAAAAABB

**C** BAAAAAAB

**D** ABAAAAAB

   **Answer:** A

**Explanation:**
Expression : BAAAAAAB, ABAAAAAB, AABAAAAB, AAABAAAB, AAAABAAB, _____.

The pattern followed is that in each term there are combinations of 6 A's and 2 B's in which last letter is always 'B' and the position of second B keeps shifting one place to the right starting from first position.

Thus, in the missing term, the sixth term will be 'B' = **AAAAABAB**

=> Ans - (A)

**Question 42**

A shopper in a mart loads his trolley and walks 30 m through an alley which is going South, then he his left and walks 10 m, then he turns North and walks another 10 m, then he turns West and walks 45 m and then he turns North and walks 20 m. Where is he now with reference to his starting position?

**A**    35 m West

**B**    55 m West

**C**    35 m East

**D**    55 m East

   **Answer:** A

**Question 43**

In the question two statements are given, followed by two conclusions, I and II. You have to consider the statements to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

**Statement I: All watches are ornaments**
**Statement II: All clocks are watches**

**Conclusion I: All ornaments are clocks**
**Conclusion II: All clocks are ornaments**

**A**    Only conclusion I follows

**B**    Only conclusion II follows

**C**    Both conclusions I and II follow

**D**    Neither conclusion I nor conclusion II follows

   **Answer:** B

**Question 44**

In the following figure, rectangle represents Physicians, circle represents Racers, triangle represents Writers and square represents Mothers. Which set of letters represents Mothers who are not Racers?
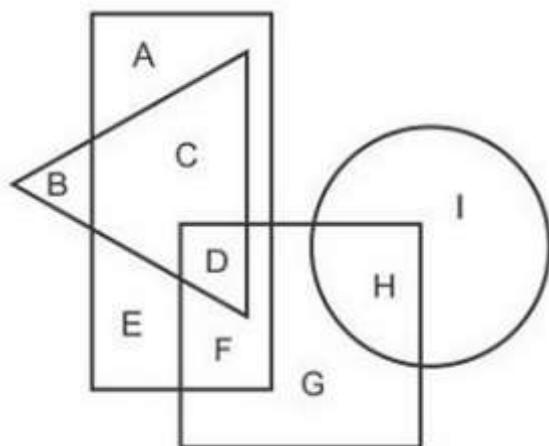


**A**   FGH

**B**   ECA

**C**   DFG

**D**   DGFI

   **Answer:** C

**Question 45**

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
GLN, HNQ, IPT, JRW, ?

**A**   KTZ

**B**   KUY

**C**   LTY

**D**   LUZ

   **Answer:** A

**Explanation:**
Series : GLN, HNQ, IPT, JRW, ?

The pattern followed in each letter of the terms is :

1st letter : G (+1 letter) = H (+1 letter) = I (+1 letter) = J (+1 letter) = K

2nd letter : L (+2 letters) = N (+2 letters) = P (+2 letters) = R (+2 letters) = T

3rd letter : N (+3 letters) = Q (+3 letters) = T (+3 letters) = W (+3 letters) = Z

Thus, missing term = **KTZ**

=> Ans - (A)

## Question 46

**In the following question, select the missing number from the given series.**
**87, 62, 42, 27, 17, ?**

**A**  7

**B**  12

**C**  8

**D**  10

   **Answer:** B

**Explanation:**
Multiples of 5 are subtracted in decreasing order.

87 - 25 = 62

62 - 20 = 42

42 - 15 = 27

27 - 10 = 17

17 - 5 = **12**

=> Ans - (B)

## Question 47

**In the following question, four groups of three numbers are given. In each group the second and third number are related to the first number by a Logic/Rule/Relation. Three are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives.**

**A**  (14, 29, 43)

**B**  (11, 23, 34)

**C**  (15, 31, 46)

**D**  (21, 42, 64)

   **Answer:** D

**Explanation:**

The numbers are of the form : $(x, 2x + 1, 3x + 1)$

But in the last option, we have $2 \times 21 + 1 = 43 \neq 42$

Thus, (21, 42, 64) is the odd one out.

=> Ans - (D)

## Question 48

**If a mirror is placed on the line MN, then which of the answer figures is the right image of the given**



A


B


C

**D**
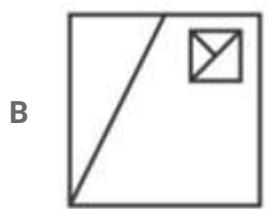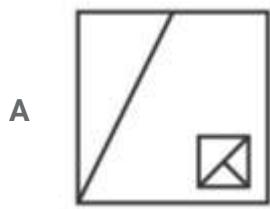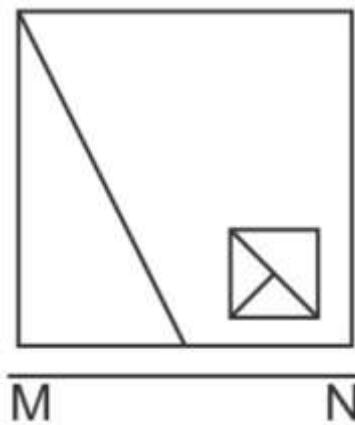


Answer: B

## Question 49

Which of the following cube in the answer figure cannot be made based on the unfolded cube in the question figure?



**A**



**B**



**C**
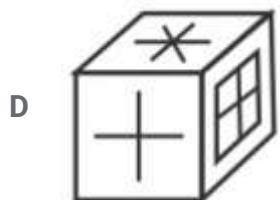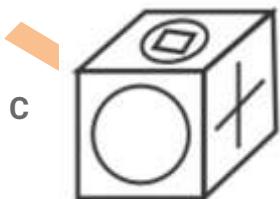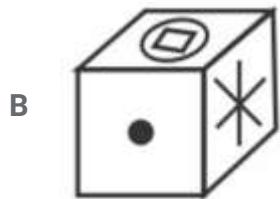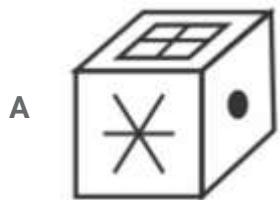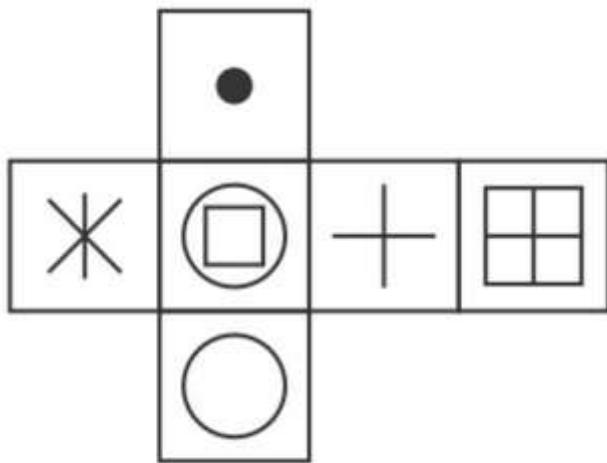


**D**

**Question 50**

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example 'C can be represented by 10, 34 etc and 'CI can be represented by 85, 96 etc. Similarly, you identify the set for the word 'GOES'.

| Matrix - I | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 0 | A | A | J | M | G |
| 1 | C | J | H | G | J |
| 2 | H | B | L | M | D |
| 3 | I | J | L | I | C |
| 4 | E | E | D | M | L |

| Matrix - II | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|
| 5 | W | V | P | V | P |
| 6 | R | S | P | Z | U |
| 7 | R | Z | Z | O | T |
| 8 | Q | T | N | S | P |
| 9 | Y | Q | R | V | X |

**A**   11,75,12,77

**B**   32,76,44,95

**C**   13,78,41,66

**D**   33,88,21,89

**Answer:** C

**Explanation:**

(A) : 11,75,12,77 = JRHZ

(B) : 32,76,44,95 = LZLY

(C) : 13,78,41,66 = **GOES**

(D) : 33,88,21,89 = ISBP

=> Ans - (C)

# English

**Instructions**
For the following questions answer them individually

**Question 51**

In the following question, some part of the sentence may have errors. Find out which part of the has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

I look up (a) after the blast (b) of light enveloped the park. (c) No error (d)

**A**   a

**B**   b

**C**   c

**D**   d

   Answer: A

**Question 52**

In the following question, some part of the sentence may have errors. Find out which part of the has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

According to the Copernican principle, the Earth does not (a) occupy a unique position in the Universe (b)implies life on other planets can be a possibility. (c) No error (d)

**A**   a

**B**   b

**C**   c

**D**   d

   Answer: B

**Question 53**

In the following question, the sentence given with blank to be filled in with an appropriate word. Select correct alternative out of the four and indicate it by selecting the appropriate option.

The _____ age movies are quite popular.

**A**   come of

**B**   long

**C**  coming of

**D**  over

　　**Answer:** C

## Question 54

**In the following question, the sentence given with blank to be filled in with an appropriate word. Select correct alternative out of the four and indicate it by selecting the appropriate option.**

**The love which is based on physical beauty is not _____.**

**A**  imminent

**B**  deponent

**C**  remanent

**D**  permanent

　　**Answer:** D

## Question 55

**In the following question, out of the given four alternatives, select the one which best expresses the meaning of the given word.**

**Mollify**

**A**  Pacify

**B**  Agitate

**C**  Provoke

**D**  Worry

　　**Answer:** A

## Question 56

**In the following question, out of the given four alternatives, select the one which best expresses the meaning of the given word.**
**Importune**

**A**   Appeal

**B**   Important

**C**   Imply

**D**   Purchase

   **Answer:** A

**Question 57**

In the following question, out of the given four alternatives, select the one which is opposite in meaning the given word.
**Rotund**

**A**   Fat

**B**   Broad

**C**   Dumpy

**D**   Slim

   **Answer:** D

**Question 58**

In the following question, out of the given four alternatives, select the one which is opposite in meaning the given word.
**Flamboyant**

**A**   Glamorous

**B**   Modest

**C**   Colorful

**D**   Sporty

   **Answer:** B

**Question 59**

Rearrange the parts of the sentence in correct order.
Bringing equity
P : for the rural population should be
Q : a priority for the National Health Mission
R : in access to the doctors and medicines

**A**  QRP

**B**  RQP

**C**  PRQ

**D**  RPQ

  **Answer:** D

**Question 60**

A sentence has been given in Active/Passive Voice. Out of the four given alternatives, select the one best expresses the same sentence in Passive/Active Voice.

**The cat caught a rat.**

**A**  A rat has been caught by the cat.

**B**  A rat was caught by the cat.

**C**  A rat is caught by the cat.

**D**  A rat had been caught by the cat.

  **Answer:** B

**Question 61**

A sentence has been given in Direct/Indirect Speech. Out of the four given alternatives, select the one which best expresses the same sentence in Indirect/Direct Speech.

**The wolf cried out to the hound, "A thought has just come into my head."**

**A**  The wolf cried out that a thought had just came into his head.

**B**  The wolf cried out to the hound that a thought had just come into his head.

**C**  The wolf cried out about a thought into his head to the hound.

**D**  The wolf told hound about a thought into his head.

**Answer:** B

## Question 62

**In the following question, a word has been written in four different ways out of which only one is spelt. Select the correctly spelt word.**

**A**  Caetegory

**B**  Category

**C**  Cateigory

**D**  Categoury

**Answer:** B

## Instructions

In the following passage, some of the words have been left out. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

Let us examine the facts in the case more _____. First of all, language is no more medium; it is like air to the creatures of the land or water to fishes. If it is perfectly clear and pure, we do notice it any more than we notice pure air when the sun is shining _____ a clear sky, or the taste of cool water when we drink a glass _____ a hot day. Unless the sun is shining, there is no brightness; unless the water is cool, there is _____ refreshment.

## Question 63

**in the case more _____. First of all**

**A**  closely

**B**  close

**C**  closed

**D**  closeness

**Answer:** A

**Question 64**

**no more _____ a medium;**

**A**   then

**B**   so

**C**   such

**D**   than

   **Answer:** D

**Question 65**

**sun is shining _____ a clear sky,**

**A**   inside

**B**   in

**C**   into

**D**   inner

   **Answer:** B

**Question 66**

**when we drink a glass _____ a hot day.**

**A**   on

**B**   onto

**C**   of

**D**   for

   **Answer:** A

**Question 67**

**there is _____ refreshment.**

**A**  not

**B**  no

**C**  none

**D**  never

   **Answer:** B

**Instructions**
For the following questions answer them individually

**Question 68**

**In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.**

**Don't put all your eggs in one basket**

**A**  It is wise to have many baskets before you start collecting eggs.

**B**  The strength of the safe has to be in proportion to the value of goods it has to protect.

**C**  Have a fool proof plan before venturing on a risky mission.

**D**  Don't risk everything on the success of one venture.

   **Answer:** D

**Question 69**

**In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.**

**Let your hair down**

**A**  Behave uninhibitedly.

**B**  Accept your deeds.

**C**  Remove the mask.

**D**  Feel fresh and rejuvenated.

   **Answer:** A

**Question 70**

In the following question, out of the four alternatives, select the alternative which is the best substitute the words/sentence.

**Senseless talk or writing**

A   Astute

B   Balderdash

C   Sagacious

D   Prudent

   **Answer:** B

**Question 71**

In the following question, out of the four alternatives, select the alternative which is the best substitute the words/sentence.

**Made or done in the traditional or original way**

A   Authentic

B   Effigy

C   Archetype

D   Forge

   **Answer:** A

**Question 72**

In the following question, out of the four alternatives, select the alternative which will improve the bracketed part of the sentence. In case no improvement is needed, select "no improvement".

**At one time, the lock industry here flourished and locks (was exported) on a major scale.**

A   is exported

B   were export

C   were exported

**D**  no improvement

    **Answer:** C

## Question 73

In the following question, out of the four alternatives, select the alternative which will improve the bracketed part of the sentence. In case no improvement is needed, select "no improvement".

The bliss of (oversleeping) cuddled up under a warm and cosy blanket is just other-worldly.

**A**  oversleep

**B**  oversleeps

**C**  overslept

**D**  no improvement

    **Answer:** D

## Question 74

The question below consists of a set of labelled sentences. Out of the four options given, select the logical order of the sentences to form a coherent paragraph.

Students who
A : intricacies of learning it
B : subject know the
C : study logic as a

**A**  CAB

**B**  BCA

**C**  BAC

**D**  CBA

    **Answer:** D

## Question 75

In the following question, four words are given out of which one word is correctly spelt. Select the spelt word.

**A**   scintillaters

**B**   scintilators

**C**   scintillators

**D**   scintilaters

Answer: C

# General Awareness

**Instructions**

For the following questions answer them individually

**Question 76**

**The agricultural price support program is an example of _____.**

**A**   a price ceiling

**B**   a price floor

**C**   equilibrium pricing

**D**   No option is correct.

Answer: B

**Question 77**

**Which was the first modern industry to develop in India?**

**A**   Iron and Steel Industry

**B**   Cement Industry

**C**   Cottage Industry

**D**   Engineering Industry

Answer: A

**Question 78**

Which of the following lake lies on the Equator in Africa continent?

A   Tanganyika

B   Victoria

C   Nyasa lake

D   Lake Kariba

   **Answer:** B

**Question 79**

Jog Falls is situated on which river?

A   Sharavati

B   Cauvery

C   Narmada

D   Chambal

   **Answer:** A

**Question 80**

Faizi lived in the court of _____.

A   Humayun

B   Dara Shikoh

C   Bahadur Shah Zafar

D   Akbar

   **Answer:** D

**Question 81**

Where did the leader of the Individual Satyagraha movement, Acharya Vinoba Bhave started this movement?

**A** Nashik

**B** Poona

**C** Pavnar

**D** Nagpur

   **Answer:** C

## Question 82

**The well-known dialogue between Nachiketa and Yama is mentioned in which Upanishada?**

**A** Chhandogyopanishad

**B** Mundkopanishad

**C** Kathopanishad

**D** Kenopanishad

   **Answer:** C

## Question 83

**Which country, in January 2018 broke India's monopoly in providing Internet access to Nepal by country's second Internet service provider?**

**A** South Korea

**B** China

**C** Japan

**D** Indonesia

   **Answer:** B

## Question 84

**Which among the following is NOT a recipient of Sangeet Natak Akamemi's fellowships (Akademi Ratna)-2018?**

**A** Gajendra Chauhan

**B**    Ram Gopal Bajaj

**C**    Sunil Kothari

**D**    Arvind Parikh

  **Answer:** A

## Question 85

**When was the "Boxer Rebellion" happened in China?**

**A**    1895

**B**    1900

**C**    1905

**D**    1909

  **Answer:** B

## Question 86

**What is formed when helium atom loses one electron?**

**A**    Proton

**B**    Positive helium ion

**C**    Negative helium ion

**D**    Alpha particle

  **Answer:** B

## Question 87

**Apart from proposing atomic thoery, what did John Dalton researched on?**

**A**    Plants

**B**    Colour blindness

**C**    Penicillin

**D** Plastic

**Answer:** B


## Question 88

**Which among the following is/are the unitary feature(s) of Indian Constitution?**
**I. Single Constitution for State and Centre**
**II. Single Citizenship**
**III. Integrated Judiciary**


**A** Only I

**B** Only II

**C** Both I and II

**D** All I, II and III

**Answer:** D


## Question 89

**Article 360 of Indian Constitution, empowers whom to proclaim a Financial Emergency?**


**A** The Finance Minister of India

**B** The Governor of Reserve Bank of India

**C** The President of India

**D** Defence Minister of India

**Answer:** C


## Question 90

**Match the following:**

| Organism | Feature of fission |
|---|---|
| I. Amoeba | 1. Many daughter cells by multipe fission |
| II. Leishmania | 2. Fission takes place in definite orientation |
| III. Plasmodium | 3. Fission can takes place inany plane |


**A** I - 2, II - 3, III - 1

**B** I - 1, II - 3, III - 2

**C** I - 2, II - 1, III - 3

**D** I - 3, II - 2, III - 1

   **Answer:** D

**Explanation:**

In amoeba organism, fission can take place in any place and in definite orientation in leishmania
In plasmodium, multiple fission forms many new organisms at the same time.

Thus, the correct order is : I - 3, II - 2, III - 1

=> Ans - (D)

**Question 91**

**What is the basis of classifying various plant tissues as meristematic tissue and permanent tissue?**

**A** Size

**B** Dividing capacity

**C** Location

**D** No option is correct.

   **Answer:** B

**Question 92**

**In December 2017, who launched project 'DARPAN' (Digital Advancement of Rural Post Office for a New India)?**

**A** Jayant Sinha

**B** Manoj Sinha

**C** Ravi Shankar Prasad

**D** Prakash Javadekar

   **Answer:** B

**Question 93**

Botanical Survey of India has discovered a new species of parasitic flowering plant Gleadovia Konyakianorum named in the honour of which community?

**A**   Toda

**B**   Caddo

**C**   Nagas

**D**   Tobu

   **Answer:** C

**Question 94**

In October 2017, State Bank of India announced to set up Country's largest innovation centre in _____.

**A**   New Delhi

**B**   Bangalore

**C**   Navi Mumbai

**D**   Hyderabad

   **Answer:** C

**Question 95**

The Union Home Ministry will set up an Indian Cyber Crime Coordination Centre (14C), an apex centre at which place to deal with cybercrimes?

**A**   Hyderabad

**B**   Pune

**C**   Bengaluru

**D**   New Delhi

   **Answer:** D

**Question 96**

A body of mass 6 kg accelerates from 6 m/s to 18 m/s in 3 seconds due to the application of a force on Calculate the magnitude of this force (in N).

**A**  48

**B**  60

**C**  24

**D**  96

   **Answer:** C

**Question 97**

We obtain average _____ by dividing the total energy consumed by the total time taken.

**A**  force

**B**  power

**C**  torque

**D**  momentum

   **Answer:** B

**Question 98**

Water covers _____ % of the Earth's surface.

**A**  95

**B**  75

**C**  55

**D**  35

   **Answer:** B

**Question 99**

**Which of the statements given below are correct?**
**A) In 2017, Lewis Hamilton raced in Formula One for Mercedes.**
**B) In 2018 IPL auctions, Mumbai Indians retained Hardik Pandya.**
**C) Chen Meng won the Table Tennis 2017 ITTF World Tour Grand Finals Women's Singles.**

**A**   Only A

**B**   Only B

**C**   Both B and C

**D**   A, B and C

   **Answer:** D

**Question 100**

_____ **among the following is not an operating system.**

**A**   Mozilla Firefox

**B**   Microsoft Windows

**C**   Linux

**D**   Apple MacOS

   **Answer:** A