

# SSC CHSL 26 March 2018 Morning Shift

## Quant

### Instructions

For the following questions answer them individually

### Question 1

Find the number of prime factor of 1024.

- A 9
- B 10
- C 11
- D 12

Answer: B

### Explanation:

Prime factorisation of  $1024 = (2)^{10}$

Thus, number of prime factors = 10

=> Ans - B

### Question 2

Which of the following is NOT prime number?

- A 251
- B 571
- C 331
- D 341

Answer: D

### Explanation:

Prime factors of 341 = 11 and 31

Hence, among the given numbers, **341** is not prime.

=> Ans - (D)

### Question 3

What is the value of  $x^4 + y^4$  when the value of  $x^3 + y^3 = 8$  and  $x + y = 2$ ?

A 2

B 8

C 16

D 32

**Answer: C**

**Explanation:**

Given :  $x^3 + y^3 = 8$  -----(i)

and  $x + y = 2$  -----(ii)

Cubing both sides, we get :

$$\Rightarrow (x + y)^3 = (2)^3$$

$$\Rightarrow x^3 + y^3 + 3xy(x + y) = 8$$

Substituting values from equations (i) and (ii),

$$\Rightarrow 8 + 3xy(2) = 8$$

$$\Rightarrow 6xy = 8 - 8 = 0$$

$$\Rightarrow xy = 0$$
 -----(iii)

Now, squaring equation (ii),  $\Rightarrow (x + y)^2 = (2)^2$

$$\Rightarrow x^2 + y^2 + 2xy = 4$$

$$\Rightarrow x^2 + y^2 = 4 \quad [\because xy = 0]$$

Similarly, again squaring both sides, we get :

$$\Rightarrow x^4 + y^4 + 2x^2y^2 = 16$$

$$\Rightarrow x^4 + y^4 + 2(xy)^2 = 16$$

$$\Rightarrow x^4 + y^4 = 16$$

$\Rightarrow$  Ans - (C)

**Question 4**

**Determine the value of  $(y - \frac{1}{y})^2$  when  $y^4 + \frac{1}{y^4} = 34$**

A 1

B 2

C 3

D 4

**Answer: D**

**Explanation:**

Given :  $y^4 + \frac{1}{y^4} = 34$

$\Rightarrow (y^2 + \frac{1}{y^2})^2 - 2(y^2)(\frac{1}{y^2}) = 34$

$\Rightarrow (y^2 + \frac{1}{y^2})^2 = 34 + 2 = 36$

$\Rightarrow y^2 + \frac{1}{y^2} = \sqrt{36} = 6$

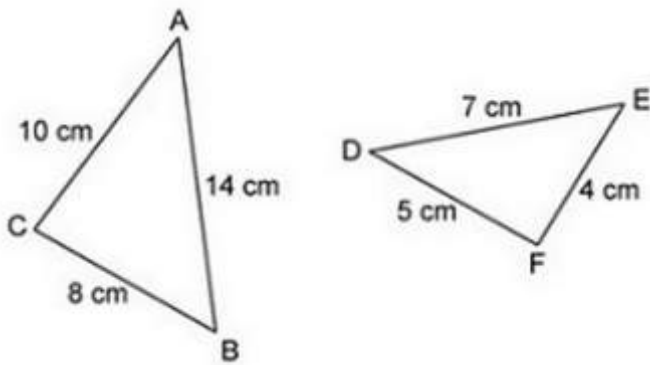
$\Rightarrow (y - \frac{1}{y})^2 + 2(y)(\frac{1}{y}) = 6$

$\Rightarrow (y - \frac{1}{y})^2 = 6 - 2 = 4$

$\Rightarrow$  Ans - (D)

**Question 5**

Which of the following condition is TRUE about the similarity of triangle ABC and DEF given below?



**A**  $\angle A = \angle D, \angle B = \angle E, \angle C = \angle F$

**B**  $\angle A = \angle E, \angle B = \angle D, \angle C = \angle F$

**C**  $\angle A = \angle F, \angle B = \angle D, \angle C = \angle E$

**D** None of these

**Answer: A**

**Explanation:**

The ratio of sides in  $\triangle ABC$  and  $\triangle DEF$

$= \frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$

$= \frac{14}{7} = \frac{8}{4} = \frac{10}{5} = \frac{2}{1}$

Since, the ratio of corresponding sides are equal,  $\Rightarrow \triangle ABC \sim \triangle DEF$

$\therefore \angle A = \angle D, \angle B = \angle E, \angle C = \angle F$

$\Rightarrow$  Ans - (A)

### Question 6

The radius of the circle is 14 cm, an arc is subtend an angle 54 degree at center. Find the length of the arc (in cm).

A 12.8

B 13.2

C 13.8

D 14.2

**Answer: B**

### Explanation:

Radius of circle = 14 cm and angle subtended by arc =  $54^\circ$

$$\text{Length of arc} = \frac{\theta}{360^\circ} \times 2\pi r$$

$$= \frac{54}{360} \times 2 \times \frac{22}{7} \times 14$$

$$= \frac{3}{20} \times 22 \times 4$$

$$= \frac{66}{5} = 13.2 \text{ cm}$$

=> Ans - (B)

### Question 7

If 5% of (P + Q) = 20% of (P - Q), then P is what percentage of Q?

A 133.33

B 166.66

C 150

D 171.33

**Answer: B**

### Explanation:

Given : 5% of (P + Q) = 20% of (P - Q)

$$\Rightarrow \frac{5}{100} \times (P + Q) = \frac{20}{100} \times (P - Q)$$

$$\Rightarrow P + Q = 4P - 4Q$$

$$\Rightarrow 4P - P = Q + 4Q$$

$$\Rightarrow 3P = 5Q$$

$$\Rightarrow \frac{P}{Q} = \frac{5}{3}$$

Thus, required % =  $\frac{5}{3} \times 100 = 166.66\%$

=> Ans - (B)

### Question 8

What number should be added to each of 4, 16, 18 and 58 so that the resulting numbers will be in proportion in the given order?

A 2

B 3

C 4

D 1

Answer: A

### Explanation:

Let the number added be =  $x$

Thus, for the new numbers to be in proportion, we have :

$$\Rightarrow \frac{4+x}{16+x} = \frac{18+x}{58+x}$$

$$\Rightarrow (4+x)(58+x) = (18+x)(16+x)$$

$$\Rightarrow x^2 + 62x + 232 = x^2 + 34x + 288$$

$$\Rightarrow 62x - 34x = 288 - 232$$

$$\Rightarrow 28x = 56$$

$$\Rightarrow x = \frac{56}{28} = 2$$

=> Ans - (A)

### Question 9

In 250 litres mixture of soda and water the ratio of amount of soda to that of water is 7 : 18. In order to make this ratio 2 : 3, how many more litres of soda should be added?

A 37.5

B 42.5

C 45

D 50

Answer: D

### Explanation:

$$\text{Amount of soda in 250 litres mixture} = \frac{7}{(7+18)} \times 250 = 70 \text{ litres}$$

$$\Rightarrow \text{Amount of water} = 250 - 70 = 180 \text{ litres}$$

Let  $x$  litres of soda is added.

$$\Rightarrow \frac{70+x}{180} = \frac{2}{3}$$

$$\Rightarrow 210 + 3x = 360$$

$$\Rightarrow 3x = 360 - 210 = 150$$

$$\Rightarrow x = \frac{150}{3} = 50$$

$\therefore$  **50 litres** of soda should be added.

$\Rightarrow$  Ans - (D)

### Question 10

The average of three numbers is 40. First number is  $\frac{4}{3}$  of the third number. If third number is 20 less than second number, then what is the value of second number?

A 60

B 50

C 10

D 20

**Answer: B**

### Explanation:

Let the third number =  $3x$

$$\Rightarrow \text{First number} = \frac{4}{3} \times 3x = 4x$$

$$\text{Second number} = 3x + 20$$

$$\text{Sum of the three numbers} = 40 \times 3 = 120$$

According to ques,

$$\Rightarrow (3x) + (4x) + (3x + 20) = 120$$

$$\Rightarrow 10x = 120 - 20 = 100$$

$$\Rightarrow x = \frac{100}{10} = 10$$

$$\therefore \text{Second number} = (3 \times 10) + 20 = 50$$

$\Rightarrow$  Ans - (B)

### Question 11

A sum of Rs 4000 becomes Rs 6000 in 1 year at a certain rate of compound interest. What will be the sum (in Rs) after 4 years?

- A 16250
- B 12000
- C 20250
- D 19500

**Answer: C**

#### Explanation:

Principal sum = Rs. 4000 and time period = 1 year

Let rate of interest =  $r\%$

=> Amount after compound interest = Rs. 6000

$$\Rightarrow P\left(1 + \frac{R}{100}\right)^T = 6000$$

$$\Rightarrow 4000\left(1 + \frac{r}{100}\right)^1 = 6000$$

$$\Rightarrow 1 + \frac{r}{100} = \frac{6000}{4000} = 1.5$$

$$\Rightarrow \frac{r}{100} = 1.5 - 1 = 0.5$$

$$\Rightarrow r = 0.5 \times 100 = 50\%$$

$$\therefore \text{Amount after 4 years} = 4000\left(1 + \frac{50}{100}\right)^4$$

$$= 4000\left(1 + \frac{1}{2}\right)^4 = 4000\left(\frac{3}{2}\right)^4$$

$$= 4000 \times \frac{81}{16}$$

$$= 250 \times 81 = \text{Rs. } 20,250$$

=> Ans - (C)

### Question 12

Mukesh sells two shirts. The cost price of the first shirt is equal to the selling price of the second shirt. The first shirt is sold at a profit of 30% and the second shirt is sold at a loss of 30%. What is the ratio of the selling price of the first shirt to the cost price of the second shirt?

- A 91:100
- B 100:91
- C 31:50
- D 50:31

**Answer: A**

**Explanation:**

Let cost price of 1st shirt = Rs.  $100x$

Profit % = 30%

$$\Rightarrow \text{Selling price of 1st shirt} = 100x + \left(\frac{30}{100} \times 100x\right) = \text{Rs. } 130x$$

Also, selling price of 2nd shirt = Rs.  $100x$

Loss % = 30%

$$\Rightarrow \text{Cost price of 2nd shirt} = \frac{100x}{(100-30)} \times 100 = \text{Rs. } \frac{1000x}{7}$$

$$\therefore \text{Required ratio} = \frac{130x}{\frac{1000x}{7}}$$

$$= (13 \times 7) : 100 = 91 : 100$$

$\Rightarrow$  Ans - (A)

**Question 13**

The marked price of an article is 60% more than its cost price. What maximum discount percentage can be offered by the shopkeeper to sell his article at no profit or no loss?

A 37.5

B 62.5

C 50

D 25

**Answer: A**

**Explanation:**

Let cost price = Rs.  $100x$

Markup % = 60%

$$\Rightarrow \text{Marked price} = 100x + \left(\frac{60}{100} \times 100x\right) = \text{Rs. } 160x$$

To have no profit/loss,  $\Rightarrow$  Selling price = Rs.  $100x$

$$\therefore \text{Discount \%} = \frac{(160x-100x)}{160x} \times 100$$

$$= \frac{600}{16} = 37.5\%$$

$\Rightarrow$  Ans - (A)

**Question 14**

If 169 is subtracted from the square of a number, then the result obtained is 7056. What is the number?



A 75

B 78

C 85

D 87

**Answer: C**

**Explanation:**

Let the number be  $x$

According to ques,

$$\Rightarrow x^2 - 169 = 7056$$

$$\Rightarrow x^2 = 7056 + 169 = 7225$$

$$\Rightarrow x = \sqrt{7225} = 85$$

$\Rightarrow$  Ans - (C)

**Question 15**

Working 5 hours a day, Shivam can read a book in 24 days. How many hours a day should he work so as to finish the same work in 8 days?

A 12

B 18

C 15

D 21

**Answer: C**

**Explanation:**

Using,  $D_1 \times H_1 = D_2 \times H_2$ , where  $D$  is the number of days and  $H$  is the number of hours.

Let number of hours required =  $h$

According to ques,  $\Rightarrow 24 \times 5 = 8 \times h$

$$\Rightarrow h = \frac{120}{8} = 15 \text{ hours}$$

$\Rightarrow$  Ans - (C)

**Question 16**

Two trains are moving in opposite directions with the same speed. If the length of each train is 120 metres and they cross each other in 12 seconds, then what is the speed (in km/hr) of each train?

- A 36
- B 45
- C 80
- D 60

**Answer:** A

**Explanation:**

Length of both trains =  $120 + 120 = 240$  m

Let speed of each train =  $x$  m/s

The trains are moving in opposite directions, thus relative speed =  $(x + x) = 2x$  m/s

Using, speed = distance/time

$$\Rightarrow 2x = \frac{240}{12} = 20$$

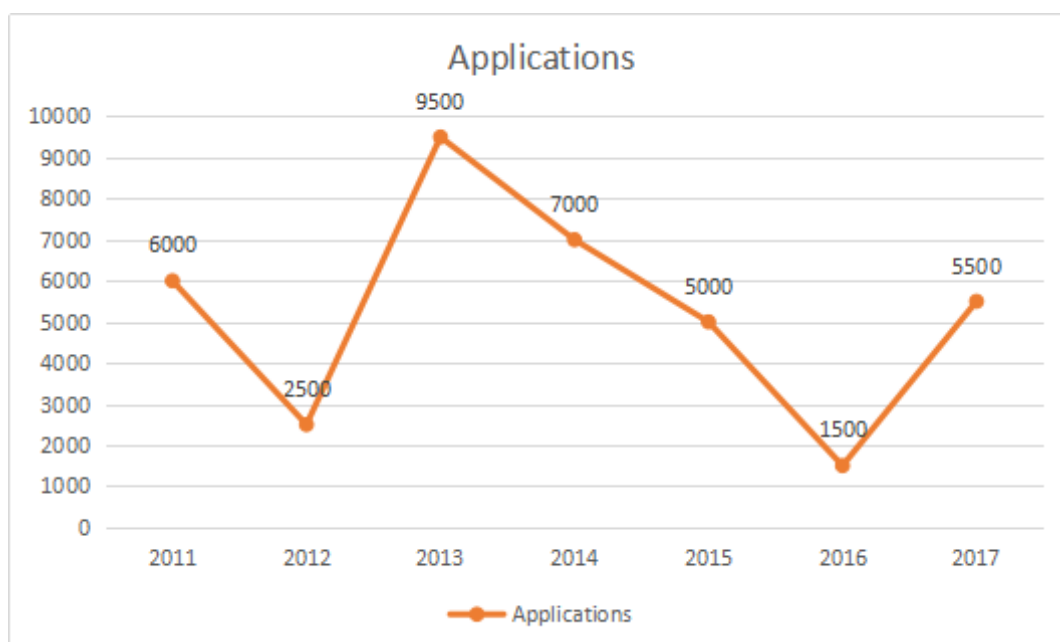
$$\Rightarrow x = \frac{20}{2} = 10$$

$$\therefore \text{Speed of each train (in km/hr)} = 10 \times \frac{18}{5} = 36 \text{ km/hr}$$

$\Rightarrow$  Ans - (A)

**Instructions**

The line graph shows the number of candidates who applied for admission to a certain college. Study the diagram and answer the following questions.



**Question 17**

In which year were applications greater than that of the previous year?

A 2012

B 2014

C 2015

D 2013

**Answer: D**

**Explanation:**

In **2013** and 2017, applications were greater than that of the previous year.

=> Ans - (D)

**Question 18**

**What was the difference in applications between the years 2017 and 2012?**

A 3500

B 2000

C 2500

D 3000

**Answer: D**

**Explanation:**

Number of applications in 2017 = 5500

Number of applications in 2012 = 2500

=> Required difference =  $5500 - 2500 = 3000$

=> Ans - (D)

**Question 19**

**Applications in 2014 were greater than that in 2015 by \_\_\_\_\_.**

A 50%

B 20%

C 28.5%

D 40%

**Answer: D**

**Explanation:**

Number of applications in 2014 = 7000

Number of applications in 2015 = 5000

$$\Rightarrow \text{Required \%} = \frac{(7000-5000)}{5000} \times 100$$

$$= \frac{2000}{50} = 40\%$$

$\Rightarrow$  Ans - (D)

### Question 20

If each applicant has to submit Rs 500 as application fees how much did the college collect (in Rs lakhs) as application fees in the last three years?

A 6

B 50

C 60

D 5

**Answer:** C

### Explanation:

Total applications in the last three years

$$= 5000 + 1500 + 5500 = 12000$$

Fee of 1 application = Rs. 500

$$\text{Total application fee (in Rs lakhs) in the last three years} = 500 \times 0.12 = 60$$

$\Rightarrow$  Ans - (C)

### Instructions

For the following questions answer them individually

### Question 21

The area of a square is  $72.25\text{cm}^2$ . Find its perimeter (in cm).

A 68

B 44

C 34

D 88

**Answer:** C

**Explanation:**

Let side of square =  $s$  cm

$$\Rightarrow \text{Area} = s^2 = 72.25$$

$$\Rightarrow s = \sqrt{72.25} = 8.5 \text{ cm}$$

$$\therefore \text{Perimeter of square} = 4s = 4 \times 8.5 = 34 \text{ cm}$$

$\Rightarrow$  Ans - (C)

**Question 22**

Find the circumference (in cm) of a circle of radius 17.5 cm.

A 140

B 110

C 38

D 76

**Answer: B**

**Explanation:**

Radius of circle =  $r = 17.5$  cm

$$\Rightarrow \text{Circumference} = 2\pi r$$

$$= 2 \times \frac{22}{7} \times 17.5$$

$$= 44 \times 2.5 = 110 \text{ cm}$$

$\Rightarrow$  Ans - (B)

**Question 23**

The curved surface area and the diameter of a right circular cylinder are  $352\text{cm}^2$  and 14 cm respectively. Find its height (in cm).

A 9

B 8

C 10

D 11

**Answer: B**

**Explanation:**

Let height of cylinder =  $h$  cm and radius,  $r = 7$  cm

Curved surface area =  $2\pi rh = 352$

$$\Rightarrow 2 \times \frac{22}{7} \times 7 \times h = 352$$

$$\Rightarrow 44h = 352$$

$$\Rightarrow h = \frac{352}{44} = 8 \text{ cm}$$

$\Rightarrow$  Ans - (B)

#### Question 24

$\triangle XYZ$  is right angled at Y. If  $m\angle Z = 60^\circ$ , then find the value of  $(\cot X - 1/3)$ .

A  $\frac{(3\sqrt{3}-1)}{3}$

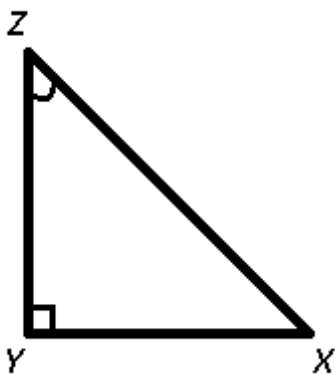
B  $\frac{(2\sqrt{3}-\sqrt{6})}{2\sqrt{2}}$

C  $\frac{-5}{3}$

D  $\frac{(2-\sqrt{3})}{2\sqrt{3}}$

Answer: A

Explanation:



Sum of angles of  $\triangle XYZ = \angle X + \angle Y + \angle Z = 180^\circ$

$$\Rightarrow 60^\circ + 90^\circ + \angle X = 180^\circ$$

$$\Rightarrow \angle X = 180^\circ - 150^\circ = 30^\circ$$

To find :  $(\cot X - \frac{1}{3})$

$$= \cot(30^\circ) - \frac{1}{3}$$

$$= \sqrt{3} - \frac{1}{3}$$

$$= \frac{(3\sqrt{3}-1)}{3}$$

$\Rightarrow$  Ans - (A)

#### Question 25

$\triangle PQR$  is right angled at Q. If  $\sin P = 12/13$ , then what is the value of  $\tan R$  ?

A 5/13

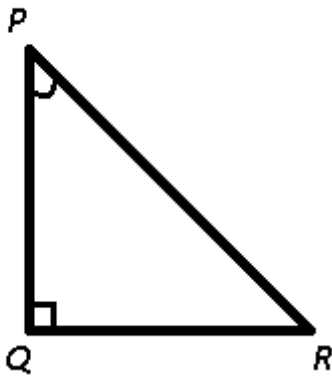
B 13/5

C 13/12

D 5/12

Answer: D

Explanation:



Given :  $\sin P = \frac{12}{13}$

Also,  $\sin P = \frac{QR}{PR} = \frac{12}{13}$

Let  $QR = 12$  cm and  $PR = 13$  cm

Thus, in  $\triangle PQR$ ,  $\Rightarrow (PQ)^2 = (PR)^2 - (QR)^2$

$\Rightarrow (PQ)^2 = (13)^2 - (12)^2$

$\Rightarrow (PQ)^2 = 169 - 144 = 25$

$\Rightarrow PQ = \sqrt{25} = 5$  cm

To find :  $\tan R = \frac{PQ}{QR}$

$= \frac{5}{12}$

$\Rightarrow$  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.

Paper : Pulp :: ? : ?

- A Sack : Jute
- B Gold : Jewellery
- C Cloth : Garment
- D Car : Vehicle

**Answer:** A

**Explanation:**

Expression = Paper : Pulp :: ? : ?

The second is used to make first, i.e. paper is made from pulp, similarly sack is made from jute.

=> Ans - (A)

**Question 27**

In the following question, select the related number pair from the given alternatives.

48 : 41 :: ? : ?

- A 68 : 63
- B 84 : 75
- C 74 : 67
- D 92 : 87

**Answer:** C

**Explanation:**

Expression = 48 : 41 :: ? : ?

The difference between the numbers =  $48 - 41 = 7$

Similarly, only the difference between  $74 - 67 = 7$

=> Ans - (C)

**Question 28**

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

DLQ : XFK :: RGM : ?

- A LBH
- B MBG



C LAG

D MAH

**Answer:** C

**Explanation:**

Expression = DLQ : XFK :: RGM : ?

The pattern followed is :

D	L	Q
(-6)	(-6)	(-6)
X	F	K

Similarly, for RGM : **LAG**

R	G	M
(-6)	(-6)	(-6)
L	A	G

=> Ans - (C)

**Question 29**

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

A Valley

B Lake

C Ocean

D Creek

**Answer:** A

**Explanation:**

Lake, ocean and creek, all contain water, but valley is an area of land, hence **valley** is the odd one 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 alternatives.

A 16 - 5

**B** 24 - 6

**C** 32 - 8

**D** 88 - 22

**Answer: A**

**Explanation:**

The first number is 4 times the second number.

$$16 \div 4 = 4 \neq 5$$

$$24 \div 4 = 6$$

$$32 \div 4 = 8$$

$$88 \div 4 = 22$$

=> Ans - (A)

**Question 31**

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

**A** ORU

**B** CFI

**C** HKN

**D** FJM

**Answer: D**

**Explanation:**

(A) : O (+3 letters) = R (+3 letters) = U

(B) : C (+3 letters) = F (+3 letters) = I

(C) : H (+3 letters) = K (+3 letters) = N

(D) : F (+4 letters) = J (+3 letters) = M

=> Ans - (D)

**Question 32**

**Arrange the given words in the sequence in which they occur in the dictionary.**

**1. Frantic**

**2. Fraud**

**3. Fountain**

**4. Frank**

**5. Frail**

**A** 54321

**B** 52314

**C** 35412

**D** 24153

**Answer: C**

**Explanation:**

As per the order of dictionary :

= Fountain -> Frail -> Frank -> Frantic -> Fraud

≡ 35412

=> Ans - (C)

**Question 33**

In the following question, select the missing number from the given series.

**43, 58, 88, 133, ?, 268**

**A** 193

**B** 203

**C** 163

**D** 218

**Answer: A**

**Explanation:**

Multiples of 15 are added.

$$43 + 15 = 58$$

$$58 + 30 = 88$$

$$88 + 45 = 133$$

$$133 + 60 = \mathbf{193}$$

$$193 + 75 = 268$$

=> 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.

**FJ, GK, HL, ?, JN**

A HN

B HL

C LN

D IM

**Answer: D**

**Explanation:**

Series : FJ, GK, HL, ?, JN

The pattern followed in each letter of the terms is :

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

2nd letter : J (+1 letter) = K (+1 letter) = L (+1 letter) = M (+1 letter) = N

Thus, missing term = **IM**

=> Ans - (D)

**Question 35**

**Among four boys, age of Ashish is thrice the age of Varun. Age of Arvind is 1/2 of the age of Varun. Amit is 8 years elder to Varun. Who is the second eldest?**

A Amit

B Ashish

C Arvind

D Varun

**Answer: A**

**Explanation:**

Let Varun's age = 10 years

=> Arvind's age =  $\frac{10}{2} = 5$  years

=> Ashish's age =  $3 \times 10 = 30$  years

=> Amit's age =  $8 + 10 = 18$  years

∴ **Amit** is the second eldest.

=> Ans - (A)

### Question 36

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

A Train

B Rain

C Van

D Track

**Answer: D**

#### **Explanation:**

The word TRAVELLING does not contain any 'C' or 'K', thus the term **Track** cannot be formed.

=> Ans - (D)

### Question 37

In a certain code language, "TUBE" is written as "202125" and "PINCH" is written as "1691438". How is "MARC" written in that code language?

A 131183

B 141162

C 131184

D 121183

**Answer: A**

#### **Explanation:**

The letters are numbered based on their position according to the English alphabetical order. A=1, B=2, C=3, D=4 and so on.

Eg :- TUBE = 20,21,2,5 -> 202125

PINCH = 16,9,14,3,8 -> 1691438

Similarly, MARC = 13,1,18,3 -> **131183**

=> Ans - (A)

### Question 38

In a certain code language, '-' represents '+', '+' represents 'x', 'x' represents '÷' and '÷' represents '-'. Find out the answer to the following question.

$$8 \div 6 - 5 + 70 \times 10 = ?$$

A 37

B 9

C 17

D 10

**Answer: A**

**Explanation:**

Expression :  $8 \div 6 - 5 + 70 \times 10 = ?$

$$\equiv 8 - 6 + 5 \times 70 \div 10$$

$$= 2 + (5 \times 7)$$

$$= 2 + 35 = 37$$

=> Ans - (A)

**Question 39**

The following equation is incorrect. Which two signs should be interchanged to correct the equation?

$$16 \div 6 + 35 \times 9 - 15 = 31$$

A + and  $\times$

B - and  $\div$

C  $\div$  and +

D - and +

**Answer: B**

**Explanation:**

Expression :  $16 \div 6 + 35 \times 9 - 15 = 31$

(A) : + and  $\times$

$$\text{L.H.S.} = 16 \div 6 \times 35 + 9 - 15$$

$$= 93.33 - 6 = 87.33 \neq \text{R.H.S.}$$

(B) : - and  $\div$

$$\text{L.H.S.} = 16 - 6 + 35 \times 9 \div 15$$

$$= 10 + (7 \times 3) = 31 = \text{R.H.S.}$$

=> Ans - (B)

**Question 40**

If  $70\$7 = 10$ ,  $50\$5 = 10$  and  $40\$8 = 5$ , then find the value of  $10\$2 = ?$

A 50

B -10

C 16

D 5

**Answer: D**

**Explanation:**

Given :  $70\$7 = 10$ ,  $50\$5 = 10$  and  $40\$8 = 5$

If we replace '\$' with ' $\div$ ', then we will get the desired result.

Eg :-  $\frac{70}{7} = 10$

and  $\frac{50}{5} = 10$

and  $\frac{40}{8} = 5$

Similarly,  $\frac{10}{2} = 5$

=> Ans - (D)

**Question 41**

**Which of the following terms follows the trend of the given list?**

YXYXZYX, YXYZYXY, YZYXYXY, YXYXZY, YXYXZYXY, \_\_\_\_\_.

A ZYXYXYXY

B YXYXZYXY

C YXZYXYXY

D YXYZYXY

**Answer: C**

**Explanation:**

Expression : YXYXZYXY, YXYZYXY, YZYXYXY, YXYXZY, YXYXZYXY, \_\_\_\_\_.

The pattern followed is that there is combination of 7 letters consisting of 'YXYXYXY' and in between the letters, 'Z' is added in such a way that its starts from third last position and keeps shifting two places to the left.

Thus, in the missing term, third letter will be Z = **YXZYXYXY**

=> Ans - (C)

### Question 42

A brother and sister leave home for school. The brother goes 0.5 km East, then turns right and goes 3.5 km and reaches his school. The sister goes 2.5 km North, then 1 km West, then turns left and goes 6 km and reaches herschool. Where is the brother's school with respect to the sister's school?

- A 0.5 km East
- B 1.5 km West
- C 0.5 km West
- D 1.5 km East

**Answer: D**

### 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 thegiven conclusions, if any, follows from the given statements.

**Statement I: Some beverages are juices**  
**Statement II: No drinks are beverages**

**Conclusion I: Some juices are drinks**  
**Conclusion II: No beverages are juices**

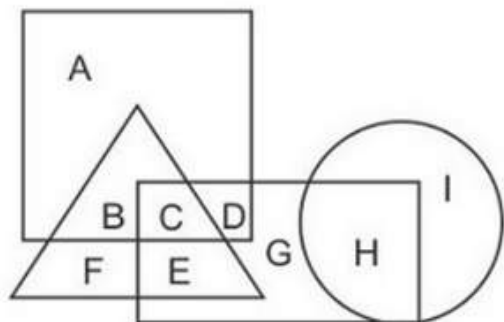
- A Only conclusion I follows
- B Only conclusion II follows
- C Both conclusions I and II follow
- D Neither conclusion I nor conclusion II follows

**Answer: D**



**Question 44**

In the following figure, rectangle represents lawyers, circle represents Athletes, triangle represents Gardeners and square represents Mothers. Which set of letters represents Lawyers who are either Athletes or Gardeners?



- A HCE
- B DG
- C BFI
- D CDH

**Answer: A**

**Question 45**

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

RLN, SNQ, TPT, URW, ?

- A VUA
- B VTZ
- C WSA
- D WTA

**Answer: B**

**Explanation:**

Series : RLN, SNQ, TPT, URW, ?

The pattern followed in each letter of the terms is :

1st letter : R (+1 letter) = S (+1 letter) = T (+1 letter) = U (+1 letter) = V

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 = **VTZ**

=> Ans - (B)

#### Question 46

In the following question, select the missing number from the given series.

**42, 47, 52, 57, ?, 67**

A 60

B 62

C 65

D 63

**Answer: B**

#### Explanation:

'5' is added to all the numbers.

$$42 + 5 = 47$$

$$47 + 5 = 52$$

$$52 + 5 = 57$$

$$57 + 5 = \mathbf{62}$$

$$62 + 5 = 67$$

=> 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 (17, 84, 35)

B (12, 59, 23)

C (7, 34, 13)

D (11, 54, 21)

**Answer: A**

#### Explanation:

The numbers are of the form :  $(x, 5x - 1, 2x - 1)$

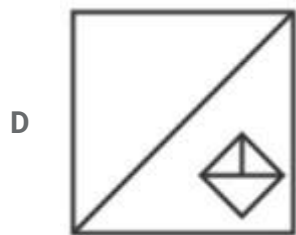
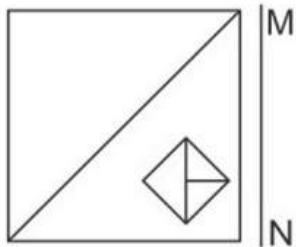
But in the first option, we have  $= 2 \times 17 - 1 = 33 \neq 35$

Thus, (17, 84, 35) is the odd one out.

=> Ans - (A)

### Question 48

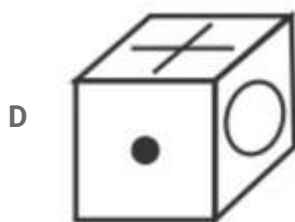
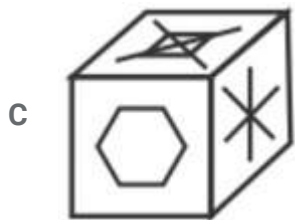
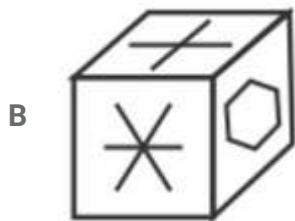
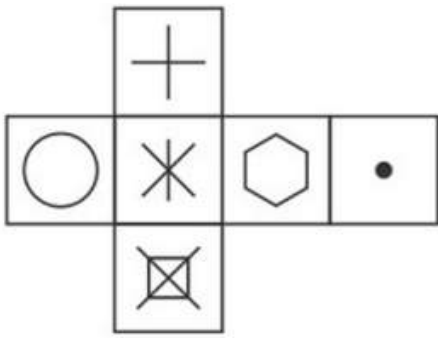
If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?



Answer: A

Question 49

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



Answer: A

### 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 numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example 'f' can be represented by 42, 34 etc and 'U' can be represented by 55, 96 etc. Similarly, you have to identify the set for the word 'SEND'.

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

	5	6	7	8	9
5	U	X	P	O	Z
6	S	W	V	P	O
7	P	T	N	W	T
8	Z	Z	W	N	Y
9	T	S	U	R	O

- A 65,22,77,43
- B 43,75,12,69
- C 21,65,12,89
- D 13,96,30,78

Answer: A

#### Explanation:

- (A) : 65,22,77,43 = SEND
- (B) : 43,75,12,69 = DPGO
- (C) : 21,65,12,89 = LSGY
- (D) : 13,96,30,78 = ISIW

=> Ans - (A)

## English

### Instructions

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

### Question 51

A rainbow is cause by reflection, refraction, and dispersion (a)/ of light among water droplets resulting in a (b)/ spectrum of light appearing in the sky. (c)/ No error (d)

- A a

**B** b

**C** c

**D** d

**Answer:** A

### Question 52

The first demonstration of the live (a) transmission of images were given by Georges Rignoux (b)/ and A. Fournier in Paris in 1909. (c)/ No error (d)

**A** a

**B** b

**C** c

**D** d

**Answer:** B

### Instructions

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

### Question 53

Priya sat \_\_\_\_ a sofa at the Opera.

**A** in

**B** under

**C** into

**D** on

**Answer:** D

### Question 54

A thorough search at \_\_\_\_'s home produced stolen items.

**A** thief

**B** their

**C** him

**D** his

**Answer:** A

### **Instructions**

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

#### **Question 55**

##### **Pithy**

**A** Verbose

**B** Brief

**C** Lengthy

**D** Unabridged

**Answer:** B

#### **Question 56**

##### **Mundane**

**A** Bounteous

**B** Heavenly

**C** Exciting

**D** Everyday

**Answer:** D

#### **Question 57**

##### **Clamorous**

**A** Noisy

**B** Confusion

**C** Disturbance

**D** supression

**Answer: D**

**Question 58**

**Allergic**

**A** Affected

**B** Immune

**C** sesitive

**D** Afraid

**Answer: B**

**Instructions**

For the following questions answer them individually

**Question 59**

**Rearrange the parts of the sentence in correct order.**

**Daily pricing**

**P : is being seen as a ploy**

**Q : government to escape any political backlash**

**R : to increase prices while allowing the**

**A** RQP

**B** PRQ

**C** QPR

**D** PQR

**Answer: B**

**Question 60**

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

**The people considered him as an outcast.**

**A** He was an outcast for the people.

**B** He is considered by the people as an outcast.



- C He was consider as an outcast by the people.
- D He was considered as an outcast by the people.

**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.**

**He says, " I am a little bit afraid."**

- A He was a little bit afraid, he said.
- B He said he was afraid.
- C He says that he is a little bit afraid.
- D He says that he was a little bit afraid.

**Answer: C**

### Question 62

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

- A Intrefrence
- B Interfrence
- C Interfrence
- D Interference

**Answer: D**

### 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.

If there is a subject of really \_\_\_\_\_ interest and utility, it is the art of writing and speaking one's own language \_\_\_\_\_. It is the basis of culture, as we all know; but it is infinitely more \_\_\_\_\_ that, it is the basis of business. \_\_\_\_\_ salesman can sell anything unless he can explain the merits of his goods in effective language, or can write \_\_\_\_\_ advertisement equally effective, or present his ideas, and the facts, in a letter.

**Question 63**

**subject of really \_\_\_\_\_ interest and utility**

- A universe
- B universally
- C universality
- D universal

**Answer: D**

**Question 64**

**one's own language \_\_\_\_\_. It is the basis**

- A effective
- B effectiveness
- C effectivity
- D effectively

**Answer: D**

**Question 65**

**is infinitely more that it is Me basis**

- A then
- B such
- C so
- D than

**Answer: D**

**Question 66**

**of business. salesman can sell**

- A None

- B Never
- C Neither
- D No

**Answer: D**

#### **Question 67**

**can write \_\_\_\_ advertisement equally**

- A a
- B an
- C the
- D it

**Answer: D**

#### **Instructions**

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

#### **Question 68**

**Pull the plug**

- A Behave greedily and take the most of the shared things for oneself.
- B Do something to stop the persistent losses.
- C Prevent something from happening or continuing.
- D Play loud irritating music.

**Answer: C**

#### **Question 69**

**As high as a kite**

- A inoicated with alcohol.
- B Feel light after meditation.

C Feel jubilant after victory.

D Behave arrogantly.

**Answer: A**

### **Instructions**

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

#### **Question 70**

**A transcendent state in which there is neither suffering, desire, nor sense of self**

A Woe

B Nirvana

C Depression

D Despondency

**Answer: B**

#### **Question 71**

**Give strength or energy to**

A Narcoleptic

B Invigorate

C Prostrate

D Exasperate

**Answer: B**

### **Instructions**

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".

#### **Question 72**

**The news (had appeared) irrelevant at that time, but now it directly affects us.**

- A have appeared
- B is appeared
- C had appears
- D no improvement

**Answer: D**

### Question 73

We, on the other hand, (is amused) by the number of channels it had to offer.

- A was amused
- B were amused
- C were amusing
- D no improvement

**Answer: B**

### Instructions

For the following questions answer them individually

### Question 74

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

**Contrast this with**

**A-the attitude of the general**

**B-public in the advanced**

**C-countries towards senior citizens**

- A ABC
- B CBA
- C CAB
- D BCA

**Answer: A**

### Question 75

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

- A imparsonators
- B impersonaters
- C impersonators
- D imparsonaters

**Answer: C**

## General Awareness

### Instructions

For the following questions answer them individually

### Question 76

The marginal propensity to consume lies between \_\_\_\_\_.

- A 0 to Infinity
- B 0 to 1
- C 1 to Infinity
- D 0 to 10

**Answer: D**

### Question 77

In India, which of the following is regulated by the Forward Markets Commission?

- A Currency Futures Trading
- B Commodities Futures Trading
- C Equity Futures Trading
- D Both Commodities Futures and Financial Futures Trading

**Answer: B**

**Question 78**

**Which of the following ruling dynasty's capital is NOT correctly matched?**

- A Pratihar Kannauj
- B Pallava Kanchi
- C Chalukya Tanjore
- D Sen Lakhnauti

**Answer: C**

**Question 79**

**Which of the following land revenue arrangement is called 'Todarmal System'?**

- A Zabti System
- B Galla Bakshi System
- C Kankut System
- D Nasaq System

**Answer: A**

**Question 80**

**Approximately what is the length of the Suez canal?**

- A 64.8 km
- B 106.5 km
- C 178 km
- D 193 km

**Answer: D**

**Question 81**

**The Ukai project is situated**

- A on Tapi river in Madhya Pradesh
- B on Tapi river in Gujarat
- C on Sabarmati river in Gujarat
- D on Narmada river in Madhya Pradesh

**Answer: A**

#### **Question 82**

**Who was the exponent of Lokayata Darshana?**

- A Kapil
- B Badarayan 3
- C Charvak
- D Ramanuja W

**Answer: C**

#### **Question 83**

**What was the theme of the 5th Global Conference on Cyber Space (GCCS), held in November, 2017?**

- A Cyber4All: AnInclusive, Sustainable, Developmental, Safe and Secure Cyberspace
- B Cyber for Better Life
- C Cyber for Better Future
- D Cyber for World

**Answer: A**

#### **Question 84**

**Who among the following is NOT a Miss World?**

- A Manushi Chhillar
- B Yukta Mookhey
- C Sushmita Sen



**D** Diana Hayden

**Answer: C**

**Question 85**

**Which is the chief crop of Sri Lanka in which country is self-sufficient?**

**A** Rice

**B** Sugarcane

**C** Rubber

**D** Cocoa

**Answer: A**

**Question 86**

**In nuclear reactor, cadmium rods are used as which of the following?**

**A** Fuel

**B** Moderator

**C** Controller

**D** Lubricant

**Answer: C**

**Question 87**

**Which of the following is used in gunpowder?**

**A** Potassium bromide

**B** Potassium nitrate

**C** Monopotassiurn

**D** Potassium sulphate

**Answer: A**

**Question 88**

According to Indian Constitution, there are three organs of government. Which among the following is/are NOT an organ/organs of it?

- I. The legislature
- II. The Media
- III. The Judiciary

- A Only I
- B Only II
- C Only III
- D Only I and III

**Answer: B**

**Question 89**

Decisions made by which court are binding on all other courts in India?

- A High courts
- B Supreme court
- C Tehsil court
- D No option is correct

**Answer: B**

**Question 90**

The sperms formed in testes are delivered through the \_\_\_\_\_ which unites with a tube coming from the urinary bladder.

- A ureter
- B seminal vesicle
- C vas deferens
- D urethra

**Answer: C**

**Question 91**

**Which of the following is NOT a constituent of xylem?**

- A Tracheids
- B Companion cells
- C Vessels
- D Xylem parenchyma

**Answer: B**

**Question 92**

**In November 2017, under the Credit Linked Subsidy Scheme (CLSS) increase in the carpet area for Middle Income Group I (MIGI) was approved. The carpet area for MIGI will be increased to \_\_\_\_\_.**

- A 150 square metre
- B 120 square metre
- C 100 square metre
- D 110 square metre

**Answer: B**

**Question 93**

**Which country is constructing a DNA sequencing platform to store ethnic data of about 80 million people?**

- A India
- B United States of America
- C China
- D Indonesia

**Answer: C**

**Question 94**

**As per a report released by the Bank of America Merrill Lynch in November 2017, India is likely overtake Japan in nominal GDP to become world's thirdlargest economy by which year?**

- A 2025
- B 2020
- C 2028
- D 2050

**Answer: C**

**Question 95**

**On the basis of whose recommendations the Union Ministry of Minority Affairs has ended the Haj subsidy from 2018?**

- A Afzal Amanullah Committee
- B Umesh Sinha Committee
- C Mukhtar Abbas Naqvi Committee
- D Shahnaz Hussain Committee

**Answer: C**

**Question 96**

**Calculate the frequency (in Hz) of a sound wave of wavelength 5 m travelling with a speed of 360 m/s.**

- A 1800
- B 36
- C 900
- D 72

**Answer: D**

**Question 97**

**In a sound wave compressions are regions where density \_\_\_\_\_**

- A as well as pressure is high.
- B as well as pressure is low.

C is high and pressure is low

D is low and pressure is high

**Answer: B**

**Question 98**

Soil contains decayed remains of living organisms. This is called \_\_\_\_\_.

A minerals

B biosphere

C saline soil

D humus

**Answer: D**

**Question 99**

Which of the statements given below are correct?

A) Sebastian Vettel won the Formula One 2017 Mexican Grand Prix.

B) In 2017, Per Mertesacker captained the Premier League team Arsenal.

C) Tan Zhongyi won the 2017 Women's World Chess Championship

A Only C

B Only B

C Both B and C

D Both A and C

**Answer: C**

**Question 100**

\_\_\_\_\_ among the following is a Language of JavaScript

A text/JavaScript

B text/ecmascript

C text/vbscript

D avaScript vbscript

**Answer: D**

# SSC CHSL 26 March 2018 Evening Shift

## General Awareness

### Instructions

For the following questions answer them individually

### Question 1

Which of the following is NOT included in general methodology while assessing the national income?

- A Pension
- B Investment Expenditure
- C Value added
- D Consumption Expenditure

**Answer: A**

### Question 2

In India, the Black Revolution is associated with self dependence in the production of \_\_\_\_\_.

- A oil seeds production
- B crude petroleum
- C black box
- D No option is correct.

**Answer: B**

### Question 3

Hiuen Tsang visited Kanchipuram, the capital of Pallavas, during the reign which of the following rulers?

- A Mahendra Varman I
- B Mahendra Varman II
- C Narasimha Varman I
- D Parmeshwar Varman II

**Answer: A**

**Question 4**

**E.P. Ramaswamy Naicker is associated with which of the following movements?**

- A Self-respect movement
- B Viacom movement
- C Justice movement
- D Ezhava movement

**Answer: A**

**Question 5**

**World famous Kaieteur Falls is situated on which river?**

- A Potaro
- B Mississippi
- C St. Lawrence
- D Zambezi

**Answer: A**

**Question 6**

**Which of the following is NOT correctly matched?**

- A Shivasamudram Falls - Kaveri
- B Dhuandhar Falls - Narmada
- C Sahastra dhara Falls - Baldy
- D Gerosoppa Falls - Kaveri

**Answer: D**

**Question 7**

**In which year did Vivekananda participate in the Parliament of the World's Religions?**

- A 1893 AD

**B** 1895 AD

**C** 1897 AD

**D** 1899 AD

**Answer: A**

### **Question 8**

**What was the theme of the Global Entrepreneurship Summit, 2017 organised in Hyderabad?**

**A** Development for All

**B** Women First, Prosperity for All

**C** Run for Development

**D** Women's World

**Answer: B**

### **Question 9**

**Which of the following films won the best film award in the 48<sup>th</sup> International Film Festival of India (IFFI), organized from November 20 to 28, 2017 in Panji, Goa?**

**A** 120 Beats Per Minute

**B** Take Off

**C** Angels Wear White

**D** Dark Skull

**Answer: A**

### **Question 10**

**How much area of Bhutan is approximately covered with forest?**

**A** 45%

**B** 61%

**C** 72%

**D** 84%



**Answer: C**

**Question 11**

The atoms of the elements having same difference between mass number and atomic number are called \_\_\_\_\_.

- A Isobar
- B Isotopes
- C Isotones
- D No option is correct.

**Answer: C**

**Question 12**

Heavy water is mostly used in which of the following?

- A In fire extinguisher
- B In nuclear reactors
- C In washing cloth
- D In both Nuclear reactors and Fire extinguisher

**Answer: B**

**Question 13**

\_\_\_\_\_ prevents the Panchayat from doing wrong things like misusing money or favouring certain people.

- A Gram Sabha
- B District Collector
- C Sarpanch
- D Secretary

**Answer: A**

### Question 14

\_\_\_\_\_ is a particular area from which all the voters living there choose their representatives.

- A Constituency
- B Voting Area
- C Election Area
- D Legislative Area

Answer: A

### Question 15

**Match the following**

<b>Organism</b>	<b>Reproduction Process</b>
I. Leishmania	1. Bud formation
II. Yeast	2. Fragmentation
III. Spirogyra	3. Binary fission

- A I - 2, II - 3, III - 1
- B I - 1, II - 3, III - 2
- C I - 3, II - 1, III - 2
- D I - 3, II - 2, III - 1

Answer: B

### Explanation:

Fragmentation is a common method of multiplication in Spirogyra, Binary fission in yeast, and bud formation in Leishmania.

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

=> Ans - (B)

### Question 16

**What is the shape of the two guard cells which enclose stomata?**

- A Oval
- B Triangular
- C Rectangular
- D Kidney shaped

**Answer: D**

**Question 17**

**Under the 'National Electric Mobility Mission Plan', the government wants to see 6-7 million electric and hybrid vehicles on Indian roads from year\_\_\_\_\_ on wards.**

- A 2022**
- B 2020**
- C 2025**
- D 2019**

**Answer: B**

**Question 18**

**Which research laboratory has developed an Artificial Intelligent robot named Shelley that writes horror stories?**

- A IBM - Media research lab**
- B MIT - Media Lab**
- C Almaden's Visual Media**
- D Wal-mart Media Lab**

**Answer: B**

**Question 19**

**On 9 November 2017, House Building Advance (HBA) rules were revised. Now, under the new rules, the central government employee can barrow a maximum of how much amount from government?**

- A Rs 50 lakh**
- B Rs 25 lakh**
- C Rs 75 lakh**
- D Rs 15 lakh**

**Answer: B**

**Question 20**

The Government of India has approved year 2018 as National year of which nutrient rich crop to boost its production?

- A Millet
- B Wheat
- C Rice
- D Maize

**Answer: A**

**Question 21**

Find the acceleration (*in  $\frac{m}{s^2}$* ) of a body which accelerates from 10 m/s to 20 m/s in 4 seconds.

- A 7.5
- B 5
- C 15
- D 2.5

**Answer: D**

**Question 22**

Propagation of sound can be visualised as propagation of \_\_\_\_\_ variations in the medium.

- A energy
- B power
- C force
- D pressure

**Answer: D**

**Question 23**

During the night, the direction of the wind would be from the \_\_\_\_\_.

- A valleys to the mountains
- B mountains to the valleys
- C land to the sea
- D sea to the land

**Answer: C**

#### **Question 24**

**Which of the statements given below are correct?**

- A) Julio Granda won the Chess 2017 Women's World Chess Championship.**
- B) Australia hosted the Tennis 2017 Hopman Cup.**
- C) Max Verstappen won the Formula One 2017 Malaysian Grand Prix.**

- A Only A
- B Only C
- C Both B and C
- D A, B and C

**Answer: C**

#### **Question 25**

**In HTML, \_\_\_\_\_ attribute specifies a set of controls that are linked so that only one radio button among each set is selected at a time.**

- A TYPE="TEXT"
- B TYPE="PASSWORD"
- C TYPE="RADIO"
- D TYPE="CHECKBOX"

**Answer: C**

# **English**

**Instructions**

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

**Question 26**

**Evolutionary processes give rise to biodiversity in every (1) level of biological organisation, including the level of (2) species, individual organisms, and molecules.(3) No error (4)**

A 1

B 2

C 3

D 4

**Answer: A**

**Question 27**

**Population decline, counter-urbanisation, invasion, and (1) movement of people, which had begun in Late (2)Antiquity, continued in the Early Middle Ages. (3) No error (4)**

A 1

B 2

C 3

D 4

**Answer: D**

**Instructions**

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

**Question 28**

**The architect was unable to \_\_\_\_\_ those designs.**

A made

B sketch

C scatter

D built

**Answer: B**

**Question 29**

Life is short but it has a \_\_\_\_\_ meaning.

- A rare
- B sharp
- C deep
- D blur

**Answer: C**

**Instructions**

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

**Question 30**

**Pert**

- A Humble
- B Lively
- C Meek
- D Timid

**Answer: B**

**Question 31**

**Copious**

- A Counterfeit
- B Plentiful
- C Commendable
- D Deficient

**Answer: B**

**Question 32**

**Egregious**

- A Noticeable
- B Gross
- C Mild
- D Obvious

**Answer: C**

**Question 33**

**Rectitude**

- A Goodness
- B Infamy
- C Honesty
- D Character

**Answer: B**

**Instructions**

For the following questions answer them individually

**Question 34**

**Rearrange the parts of the sentence in correct order.**

**The elusive**

**P : status in the Red List of the International**

**Q : snow leopard has lost its endangered**

**R : Union for Conservation of Nature**

- A QPR
- B RPQ
- C QRP
- D PQR

**Answer: A**



### Question 35

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

**He gave her promotion happily.**

- A She was given promotion happily by him.
- B She had been given promotion by him happily.
- C Her promotion was gave happily by him.
- D Her promotion was given.

**Answer: A**

### Question 36

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.

**Anuj said, "I need your help now."**

- A Anju needed my help then.
- B Anuj said that he needed my help then.
- C Anuj said he needed my help now.
- D Anuj says he needed my help now.

**Answer: B**

### Question 37

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

- A Hygiene
- B Hygine
- C Higine
- D Hygeine

**Answer: A**

**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.

The reason is a fear that we will not \_\_\_\_\_ find ourselves in that higher echelon of posts and achievements that get so many likes and reports, a sign of success and \_\_\_\_\_ in our binary outlook. A darker worry also exists at the back \_\_\_\_\_ our mind. What if we end \_\_\_\_\_ in the other group, an object of ridicule, derided as another in a long list of failures \_\_\_\_\_ embarrassments that go viral for all the wrong reasons?

**Question 38**

**we will not \_\_\_\_\_ find ourselves in that**

- A automatically
- B automatic
- C automatical
- D automation

**Answer: A**

**Question 39**

**a sign of success and \_\_\_\_\_ in our binary outlook.**

- A appreciate
- B appreciative
- C appreciation
- D appreciatively

**Answer: C**

**Question 40**

**at the back \_\_\_\_\_ our mind.**

- A for
- B from

C off

D of

**Answer: D**

**Question 41**

**What if we end \_\_\_\_\_ in the other group**

A upon

B on

C up

D above

**Answer: C**

**Question 42**

**list of failures \_\_\_\_\_ embarrassments that go viral**

A but

B nor

C also

D and

**Answer: D**

**Instructions**

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

**Question 43**

**Stab someone in the back**

A Praise someone.

B Like someone secretly.

C Betray someone.

**D** Meet someone after a long time.

**Answer: C**

**Question 44**

**Over my dead body**

**A** Used to emphasize that one completely opposes something.

**B** Be dead sure of something.

**C** Feel afraid of something or someone.

**D** Feel unhealthy and very weak.

**Answer: A**

**Instructions**

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

**Question 45**

**Farmland ploughed and harrowed but left for a period without being sown in order to restore its fertility**

**A** Fallow

**B** Urbane

**C** Sophisticated

**D** Genteel

**Answer: A**

**Question 46**

**Showing or feeling no interest, enthusiasm, or concern**

**A** Ardent

**B** Fervent

**C** Apathetic

**D** Melancholic

**Answer: C**

**Instructions**

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".

**Question 47**

**Over the last few weeks I (has been) on a whirlwind series of travel for work and vacation.**

- A have been
- B was been
- C have being
- D no improvement

**Answer: A**

**Question 48**

**I closed the window just in time and (return) to my room with relief.**

- A returns
- B returned
- C will return
- D no improvement

**Answer: B**

**Instructions**

For the following questions answer them individually

**Question 49**

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

**In order to**

- A-regulate the technology and boost**
- B-the rankings, we need our**
- C-teachers to do exponential thinking**

- A CBA

**B** CAB

**C** BCA

**D** ABC

**Answer:** D

### Question 50

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

**A** symptommatically

**B** symptomatically

**C** symptomatically

**D** symptommatically

**Answer:** C

## Reasoning

### Instructions

For the following questions answer them individually

### Question 51

In the following question, select the related word pair from the given alternatives.

**Ohm : Resistance :: ? : ?**

**A** Temperature : Degree

**B** Hectare : Area

**C** Energy : Watt

**D** Current : Ampere

**Answer:** B

### Explanation:

Expression = Ohm : Resistance :: ? : ?

The first is the S.I. unit of the second, i.e. Ohm is the S.I. unit to measure resistance, similarly hectare is the unit of Area.

=> Ans - (B)

### Question 52

In the following question, select the related number from the given alternatives.

16 : 23 :: 22 : ?

A 34

B 29

C 23

D 31

**Answer: B**

### Explanation:

Expression = 16 : 23 :: 22 : ?

The numbers are of the form =  $n : n + 7$

Eg :-  $16 + 7 = 23$

Similarly,  $22 + 7 = 29$

=> Ans - (B)

### Question 53

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

GOI : RZT :: FMD : ?

A PWN

B QXP

C PWO

D QXO

**Answer: D**

### Explanation:

Expression = GOI : RZT :: FMD : ?

The pattern followed is :

G	O	I
(+11)	(+11)	(+11)
R	Z	T

Similarly, for FMD : **QXO**

F	M	D
(+11)	(+11)	(+11)
Q	X	O

=> Ans - (D)

#### Question 54

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

- A Figure - Rectangle
- B Ornament - Ring
- C Vehicle - Scooter
- D Necklace - Ornament

**Answer:** D

#### Explanation:

Second is one of the types of first, rectangle is a figure, ring is an ornament, scooter comes under types of vehicle, hence **Necklace - Ornament** is the odd one out, since its order is reversed.

=> Ans - (D)

#### Question 55

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 alternatives.

- A 17 - 34
- B 37 - 74
- C 43 - 86
- D 29 - 59

**Answer:** D



**Explanation:**

The second number is double of the first number.

$$17 \times 2 = 34$$

$$37 \times 2 = 74$$

$$43 \times 2 = 86$$

$$29 \times 2 = 58 \neq 59$$

=> Ans - (D)

**Question 56**

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

A SKC

B ZRJ

C ZSK

D VNF

**Answer: C**

**Explanation:**

(A) : S (-8 letters) = K (-8 letters) = C

(B) : Z (-8 letters) = R (-8 letters) = J

(C) : Z (-7 letters) = S (-8 letters) = K

(D) : V (-8 letters) = N (-8 letters) = F

=> Ans - (C)

**Question 57**

Arrange the given words in the sequence in which they occur in the dictionary.

1. Pinnacle

2. Pigment

3. Pierce

4. Phony

5. Pick

A 52431

B 45321

C 12453

D 23514

**Answer: B**

**Explanation:**

As per the order of dictionary :

= Phony -> Pick -> Pierce -> Pigment -> Pinnacle

≡ 45321

=> Ans - (B)

**Question 58**

In the following question, select the missing number from the given series.

13, 19, 32, 51, 83, ?

A 142

B 134

C 156

D 140

**Answer: B**

**Explanation:**

The given series is a type of Fibonacci series where the previous two numbers are added to get the next one.

$$13 + 19 = 32$$

$$19 + 32 = 51$$

$$32 + 51 = 83$$

$$51 + 83 = \mathbf{134}$$

=> Ans - (B)

**Question 59**

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

CLG, GPK, KTO, OXS, ?

A TBW

B SZW

C SWA

D SBW

**Answer: D**

**Explanation:**

Series : CLG, GPK, KTO, OXS, ?

The pattern followed in each letter of the terms is :

1st letter : C (+4 letters) = G (+4 letters) = K (+4 letters) = O (+4 letters) = S

2nd letter : L (+4 letters) = P (+4 letters) = T (+4 letters) = X (+4 letters) = B

3rd letter : G (+4 letters) = K (+4 letters) = O (+4 letters) = S (+4 letters) = W

Thus, missing term = **SBW**

=> Ans - (D)

**Question 60**

**Suraj is shorter than Gopal but taller than Tarun. Rajan is the tallest and Shivam is shorter than Suraj but not the shortest. Who is the third shortest?**

**A** Gopal

**B** Suraj

**C** Rajan

**D** Shivam

**Answer: B**

**Explanation:**

Suraj is shorter than Gopal but taller than Tarun, => Gopal > Suraj > Tarun

Shivam is shorter than Suraj but not the shortest, => Gopal > Suraj > Shivam > Tarun

Also, Rajan is the tallest. Thus the heights in decreasing order is :

**Rajan > Gopal > Suraj > Shivam > Tarun**

∴ Suraj is the third shortest.

=> Ans - (B)

**Question 61**

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

**A** Vote

**B** Rose

**C** End

D Done

Answer: A

**Explanation:**

The word ENDEAVORS does not contain any 'T', thus the term **Vote** cannot be formed.

=> Ans - (A)

**Question 62**

In a certain code language, "LINKS" is written as "93210" and "CROMA" is written as "84576". How is "ROCKS" written in that code language?

A 81054

B 83106

C 45810

D 10486

Answer: C

**Explanation:**

Codes for each letter is given :

R -> 4

O -> 5

C -> 8

K -> 1

S -> 0

Thus, ROCKS : **45810**

=> Ans - (C)

**Question 63**

In a certain code language, '-' represents '+', '+' represents 'x', 'x' represents '÷' and '÷' represents '-'. Find out the answer to the following question.

$$7 - 8 + 20 \times 10 \div 9 = ?$$

A 18

B 20

C 22

D 14

Answer: D

**Explanation:**

Expression :  $7 - 8 + 20 \times 10 \div 9 = ?$

$$\equiv 7 + 8 \times 20 \div 10 - 9$$

$$= 7 + (8 \times 2) - 9$$

$$= 16 - 2 = 14$$

=> Ans - (D)

#### Question 64

The following equation is incorrect. Which two signs should be interchanged to correct the equation?

$$16 \times 4 - 10 + 2 \div 12 = 18$$

A  $\times$  and  $\div$

B  $\div$  and  $-$

C  $-$  and  $+$

D  $-$  and  $\times$

Answer: A

#### Explanation:

Expression :  $16 \times 4 - 10 + 2 \div 12 = 18$

(A) :  $\times$  and  $\div$

$$\equiv 16 \div 4 - 10 + 2 \times 12 = 18$$

$$\text{L.H.S.} = \left(\frac{16}{4}\right) - 10 + (2 \times 12)$$

$$= 4 - 10 + 24 = 18 = \text{R.H.S.}$$

=> Ans - (A)

#### Question 65

If  $4!4 = 80$ ,  $3!8 = 110$  and  $6!2 = 80$ , then find the value of  $7!9 = ?$

A 70

B 100

C 60

D 160

Answer: D

#### Explanation:

Given :  $4!4 = 80$ ,  $3!8 = 110$  and  $6!2 = 80$

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

Eg :-  $(4 + 4) \times 10 = 80$

and  $(3 + 8) \times 10 = 110$  and  $(6 + 2) \times 10 = 80$

Similarly,  $(7 + 9) \times 10 = 160$

=> Ans - (D)

### Question 66

Which of the following terms follows the trend of the given list?

ABABCDAB, ABADCBAB, ABCDABAB, ADCBABAB, CDABABAB, \_\_\_\_\_.

A ABABADCB

B ABABCDAB

C ABADCBAB

D CBABABAD

**Answer: D**

### Explanation:

Expression : ABABCDAB, ABADCBAB, ABCDABAB, ADCBABAB, CDABABAB, \_\_\_\_\_.

The above series is a combination of 4 'AB', but in each alternative term starting from the 5th position, 1 set of AB is replaced by CD and in the even number of terms, 1 set of BA is replaced by DC shifting one place to the left.

Thus, in the missing term (6th term), 4th B is replaced by D and first term C = **CBABABAD**

=> Ans - (D)

### Question 67

The fitness club has organised a race. The route goes 4.5 km West from the starting point. It then turns North and goes 3 kms, then turns East and goes 4.5 km, finally it turns left and goes 1.5 km to reach the end point. Where is the end point with respect to the start point?

A 4.5 km North

B 1.5 km South

C 4.5 km South

D 1.5 km North

**Answer: A**

**Question 68**

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: Some ribbons are tapes**

**Statement II: Some strips are ribbons**

**Conclusion I: All tapes are strips**

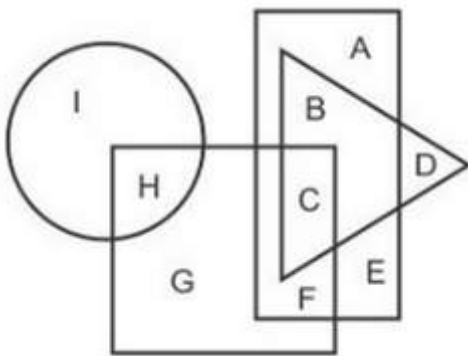
**Conclusion II: No strips are tapes**

- 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: D**

**Question 69**

In the following figure, rectangle represents Hairstylists, circle represents Choreographers, triangle represents Mountain climbers and square represents Gymnasts. Which set of letters represents Gymnasts who are both Hairstylists as well as Mountain climbers?



- A CF
- B GF
- C C
- D BC

**Answer: C**

### Question 70

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

AHR, HOY, OVF, VCM, ?

A CJT

B BKU

C ALV

D ZGQ

**Answer: A**

#### Explanation:

Series : AHR, HOY, OVF, VCM, ?

The pattern followed in each letter of the terms is :

1st letter : A (+7 letters) = H (+7 letters) = O (+7 letters) = V (+7 letters) = C

2nd letter : H (+7 letters) = O (+7 letters) = V (+7 letters) = C (+7 letters) = J

3rd letter : R (+7 letters) = Y (+7 letters) = F (+7 letters) = M (+7 letters) = T

Thus, missing term = **CJT**

=> Ans - (A)

### Question 71

In the following question, select the missing number from the given series.

6, 13, 20, 27, ?

A 34

B 32

C 37

D 43

**Answer: A**

#### Explanation:

'7' is added to all the numbers.

$$6 + 7 = 13$$

$$13 + 7 = 20$$



$$20 + 7 = 27$$

$$27 + 7 = 34$$

=> Ans - (A)

### Question 72

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 (7, 36, 21)

B (9, 46, 27)

C (11, 56, 33)

D (22, 106, 63)

Answer: D

### Explanation:

The numbers are of the form :  $(x, 5x + 1, 3x)$

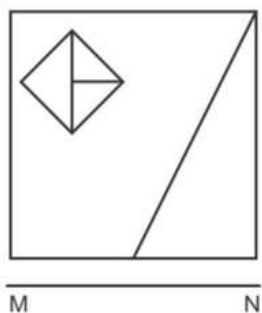
But in the last option, we have =  $3 \times 22 = 66 \neq 63$

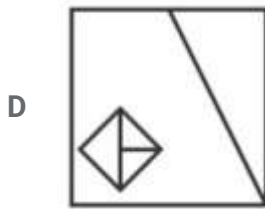
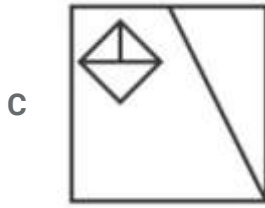
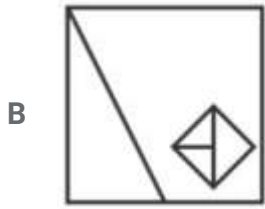
Thus, (22, 106, 63) is the odd one out.

=> Ans - (D)

### Question 73

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

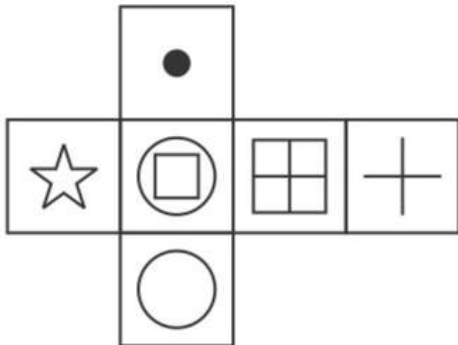


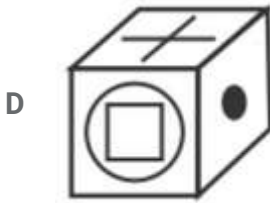


Answer: D

Question 74

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





Answer: D

Question 75

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 numbered 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 21,34 etc and T can be represented by 97,89 etc. Similarly, you have to identify the set for the word 'MAZE'.

Matrix - I

	0	1	2	3	4
0	E	F	H	E	I
1	E	G	E	M	M
2	K	C	H	G	L
3	L	J	G	G	C
4	J	A	M	J	J

Matrix - II

	5	6	7	8	9
5	N	W	P	V	S
6	R	W	Q	Y	N
7	P	Z	P	U	U
8	N	Q	U	R	T
9	R	V	T	Q	O

A 22,97,43,66

B 24,76,12,66

C 31,76,11,58

D 14,41,76,12

Answer: D

Explanation:

(A) : 22,97,43,66 = HTJW

(B) : 24,76,12,66 = LZEW

(C) : 31,76,11,58 = JZGV

(D) : 14,41,76,12 = **MAZE**

=> Ans - (D)

# Quant

## Instructions

For the following questions answer them individually

### Question 76

Find the average of first 20 multiples of 9.

A 94.8

B 94.7

C 94.6

D 94.5

Answer: D

### Explanation:

First 20 multiples of 9 = 9, 18, 27, ....., 171, 180

$$\Rightarrow \text{Sum} = 9(1 + 2 + 3 + \dots + 19 + 20)$$

$$= 9 \times \frac{20(20+1)}{2} \quad [ \because \text{Sum of first } n \text{ integers} = \frac{n(n+1)}{2} ]$$

$$= 9 \times 10 \times 21 = 1890$$

$$\Rightarrow \text{Average} = \frac{1890}{20} = 94.5$$

$\Rightarrow$  Ans - (D)

### Question 77

Calculate:  $\frac{7|2-6|-4|5|\div 5}{-7(2)-2\times 2\div 2+2}$

A  $\frac{-16}{18}$

B  $\frac{-14}{7}$

C  $\frac{-12}{7}$

D  $\frac{-12}{18}$

Answer: C

### Explanation:

$$\text{Expression} = \frac{7|2-6|-4|5|\div 5}{-7(2)-2\times 2\div 2+2}$$

We know that  $|-x| = x$

$$= \frac{7|-4|-(4|5|\div 5)}{-7(2)-(2\times 2\div 2)+2}$$

$$= \frac{(7\times 4)-4}{-14-2+2}$$

$$= \frac{24}{-14} = \frac{-12}{7}$$

=> Ans - (C)

### Question 78

What is the value of equation  $a^3 + b^3 + c^3 - 3abc$  if  $a^2 + b^2 + c^2 = ab + bc + ca + 4$  and  $a + b + c = 4$

A 0

B 1

C 16

D 256

Answer: C

### Explanation:

$$\text{Given : } a + b + c = 4 \text{ -----(i)}$$

$$\text{and } a^2 + b^2 + c^2 = ab + bc + ca + 4$$

$$\Rightarrow a^2 + b^2 + c^2 - ab - bc - ca = 4 \text{ -----(ii)}$$

$$\text{To find : } a^3 + b^3 + c^3 - 3abc$$

$$= (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$$

Substituting values from equations (i) and (ii), we get :

$$= 4 \times 4 = 16$$

=> Ans - (C)

### Question 79

What is the x - intercept of the linear equation  $18x + 25y - 900 = 0$ ?

A 18

B 25

C 50

D 450

**Answer: C**

**Explanation:**

$$\text{Equation of line : } 18x + 25y - 900 = 0$$

To find x-intercept, we need to put  $y = 0$  (and vice-versa)

$$\Rightarrow 18x + 25(0) = 900$$

$$\Rightarrow x = \frac{900}{18} = 50$$

$\Rightarrow$  Ans - (C)

**Question 80**

Two equal circles intersect each other at point A and B, whose centers are O and O'.  $OO' = 24$  mm and  $AB = 10$  mm, then find the area (in sq. mm) of the circle.

A 530.66

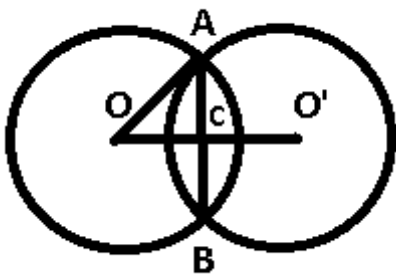
B 520.66

C 510.33

D 500.33

**Answer: A**

**Explanation:**



AB is chord to each of the circle and  $AB = 10$  mm and  $OO' = 24$  mm

Let radius of each circle =  $r$  mm

A line drawn from the centre of the circle perpendicular to the chord bisects it in two parts.

$$\Rightarrow AC = \frac{10}{2} = 5 \text{ mm}$$

$$\text{Similarly, } OC = \frac{24}{2} = 12 \text{ mm}$$

Now, in  $\triangle OAC$

$$\Rightarrow (OA)^2 = (OC)^2 + (AC)^2$$

$$\Rightarrow OA = \sqrt{(12)^2 + (5)^2}$$

$$\Rightarrow OA = \sqrt{144 + 25} = \sqrt{169}$$

$$\Rightarrow OA = 13 \text{ mm}$$

$$\therefore \text{Area of triangle} = \pi r^2$$

$$= 3.14 \times (13)^2 = 530.66 \text{ mm}^2$$

$$\Rightarrow \text{Ans - (A)}$$

### Question 81

The length of the diameter of the circle is 10 cm and length of the chord drawn in a circle is 6 cm. Find the distance (in cm) of chord from the center.

A 10

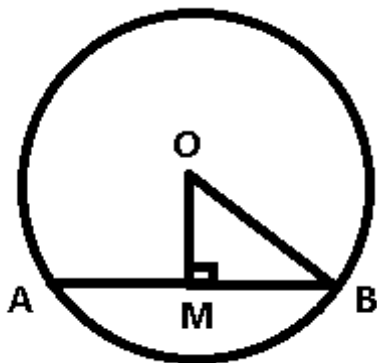
B 8

C 6

D 4

Answer: D

Explanation:



Given : Diameter = 10 cm and AB = 6 cm

To find : OM = ?

Solution : Radius OB =  $\frac{10}{2} = 5$  cm

Also, MB =  $\frac{6}{2} = 3$  cm

In right  $\triangle$  OMB

$$\Rightarrow (OM)^2 = (OB)^2 - (MB)^2$$

$$\Rightarrow (OM)^2 = (5)^2 - (3)^2$$

$$\Rightarrow (OM)^2 = 25 - 9 = 16$$

$$\Rightarrow OM = \sqrt{16} = 4 \text{ cm}$$

$\Rightarrow$  Ans - (D)

**Question 82**

60% of P = 50% of Q and Q = x% of P. What is the value of x?

- A 130
- B 120
- C 140
- D 80

**Answer: B**

**Explanation:**

Given : 60% of P = 50% of Q

$$\Rightarrow 60P = 50Q$$

$$\Rightarrow \frac{Q}{P} = \frac{6}{5} \text{-----(i)}$$

$$\therefore Q = x\% \text{ of } P$$

$$\Rightarrow \frac{Q}{P} = \frac{x}{100}$$

$$\Rightarrow x = \frac{6}{5} \times 100 = 120$$

$\Rightarrow$  Ans - (B)

**Question 83**

X, Y and Z are partners in a company. In one year X receives 1/4 part of profit, Y receives 1/5 part of profit and Z receives Rs 22000. How much amount (in Rs) will X get as profit?

- A 10000
- B 12000
- C 15000
- D 18000

**Answer: A**

**Explanation:**

Let total profit earned = Rs.  $20x$

$$\text{Profit earned by X} = \frac{1}{4} \times 20x = 5x$$

$$\text{Profit earned by Y} = \frac{1}{5} \times 20x = 4x$$

$$\Rightarrow \text{Profit earned by Z} = 20x - (5x + 4x) = 11x$$



According to ques,

$$\Rightarrow 11x = 22,000$$

$$\Rightarrow x = \frac{22,000}{11} = Rs. 2,000$$

$$\therefore \text{Amount earned by X as profit} = 5 \times 2,000 = Rs. 10,000$$

$\Rightarrow$  Ans - (A)

#### Question 84

P and Q started a business by investing Rs 50000 and Rs 40000 respectively. After 4 months, P withdraws Rs 20000 while Q invest Rs 70000 more after 6 months of starting the business. At the end of the year P's share in the profit is Rs 11000. What will be the total profit (in Rs) at the end of year?

A 33500

B 27600

C 42800

D 38800

**Answer:** A

#### Explanation:

P invested Rs. 50,000 for 4 months and Rs. 30,000 for 8 months

Q invested Rs. 40,000 for 6 months and Rs. 110,000 for 6 months

$$\Rightarrow \text{Ratio of profits of P:Q} = [(50,000 \times 4) + (30,000 \times 8)] : [(40,000 \times 6) + (110,000 \times 6)]$$

$$= (20 + 24) : (24 + 66) = 44 : 90 = 22 : 45$$

Let total profit earned = Rs.  $x$

$$\Rightarrow \text{P's share} = \frac{22}{(22+45)} \times x = 11,000$$

$$\Rightarrow x = 11,000 \times \frac{67}{22}$$

$$\Rightarrow x = 500 \times 67 = Rs. 33,500$$

$\Rightarrow$  Ans - (A)

#### Question 85

The average weight of 25 candles is 40 grams. If some candles of weight 50 grams each were removed, then average weight becomes 37.5 grams. How many candles of weight 50 grams each were removed?

A 3

B 5

C 8

D 12

Answer: B

**Explanation:**

Average weight of 25 candles = 40 grams

=> Total weight of 25 candles =  $40 \times 25 = 1000$  grams

Let  $n$  candles of 50 grams of weight were removed, then

$$\Rightarrow \frac{1000-50n}{25-n} = 37.5$$

$$\Rightarrow 1000 - 50n = 937.5 - 37.5n$$

$$\Rightarrow 50n - 37.5n = 1000 - 937.5$$

$$\Rightarrow 12.5n = 62.5$$

$$\Rightarrow n = \frac{62.5}{12.5} = 5$$

=> Ans - (B)

**Question 86**

Simple interest on a sum for 9 months at 8% per annum is Rs 270. What is the value (in Rs) of the sum?

A 5200

B 5400

C 4500

D 3600

Answer: C

**Explanation:**

Let principal amount = Rs.  $x$

Rate of interest = 8% and time period =  $\frac{9}{12} = \frac{3}{4}$  years

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

$$\Rightarrow \frac{x \times 8 \times 3}{4 \times 100} = 270$$

$$\Rightarrow \frac{6x}{100} = 270$$

$$\Rightarrow x = \frac{270 \times 100}{6} = \text{Rs. } 4,500$$

=> Ans - (C)

**Question 87**

The difference between cost price and selling price is Rs 575. If profit percentage is 23%, then what is the selling price (in Rs)?

- A 3225
- B 1925
- C 2500
- D 3075

**Answer: D**

**Explanation:**

Difference between cost price and selling price = Profit = Rs. 575

$$\text{Profit \%} = \frac{\text{profit}}{C.P.} \times 100$$

$$\Rightarrow \frac{575}{CP} \times 100 = 23$$

$$\Rightarrow CP = \frac{57500}{23} = Rs. 2500$$

$$\therefore \text{Selling price} = Rs. (2500 + 575) = Rs. 3075$$

$\Rightarrow$  Ans - (D)

**Question 88**

A merchant marks the price of his articles 20% above the cost price. If he allows 20% discount, then what is the profit or loss percentage?

- A 2% loss
- B 4% profit
- C 4% loss
- D No profit/loss

**Answer: C**

**Explanation:**

Let cost price = Rs.  $100x$

$$\Rightarrow \text{Marked price} = 100x + \left(\frac{20}{100} \times 100x\right) = Rs. 120x$$

Discount % = 20%

$$\Rightarrow \text{Selling price} = 120x - \left(\frac{20}{100} \times 120x\right) = Rs. 96x$$

$$\therefore \text{Selling price} < \text{Cost price, thus loss \%} = \frac{(100x - 96x)}{100x} \times 100 = 4\%$$

$\Rightarrow$  Ans - (C)

**Question 89**

What is that least digit that must be added to the product  $5786 \times 5784$  to make it a perfect square?

A 1

B 6

C 5

D 4

**Answer:** A

**Explanation:**

Expression :  $5786 \times 5784$

$$= (5785 + 1) \times (5785 - 1)$$

Let  $5785 = x$

$$\Rightarrow (x + 1)(x - 1) = x^2 - 1$$

Clearly to make above term a perfect square, we need to add 1

$$\Rightarrow x^2 - 1 + 1 = x^2$$

$\Rightarrow$  Ans - (A)

**Question 90**

20 boys do one fourth of work in 25 days. How many more boys will be required to complete the remaining work in 50 days?

A 8

B 10

C 15

D 20

**Answer:** B

**Explanation:**

Using,  $\frac{M_1 D_1}{W_1} = \frac{M_2 D_2}{W_2}$ , where  $M$  is number of men,  $D$  is number of days and  $W$  is work done.

Let total work to be done = 4 units

$$\Rightarrow \text{Remaining work} = 4 - \frac{1}{4} \times 4 = 3 \text{ units}$$

Let  $x$  more boys are required.

$$\Rightarrow \frac{20 \times 25}{1} = \frac{(x+20) \times 50}{3}$$

$$\Rightarrow \frac{(x+20)}{3} = \frac{20 \times 25}{50}$$

$$\Rightarrow x + 20 = 10 \times 3 = 30$$

$$\Rightarrow x = 30 - 20 = 10$$

$\therefore$  10 more boys will be required to complete the remaining work in 50 days.

$\Rightarrow$  Ans - (B)

### Question 91

When Gopal walks from A to B and returns from B to A on cycle, then it takes him 46 minutes. By walking both ways, it takes him 75 minutes. If he rides cycle both ways then what will be the total time (in minutes)?

A 19

B 17

C 23

D 15

**Answer: B**

### Explanation:

Let speed of walking =  $x$  m/min and speed of cycling =  $y$  m/min

Let distance between A and B =  $d$  m

According to ques, when he walks both ways,

$$\Rightarrow \frac{d}{x} + \frac{d}{x} = 75$$

$$\Rightarrow \frac{d}{x} = \frac{75}{2} = 37.5$$

$$\text{Also, } \frac{d}{x} + \frac{d}{y} = 46$$

$$\Rightarrow \frac{d}{y} = 46 - 37.5 = 8.5$$

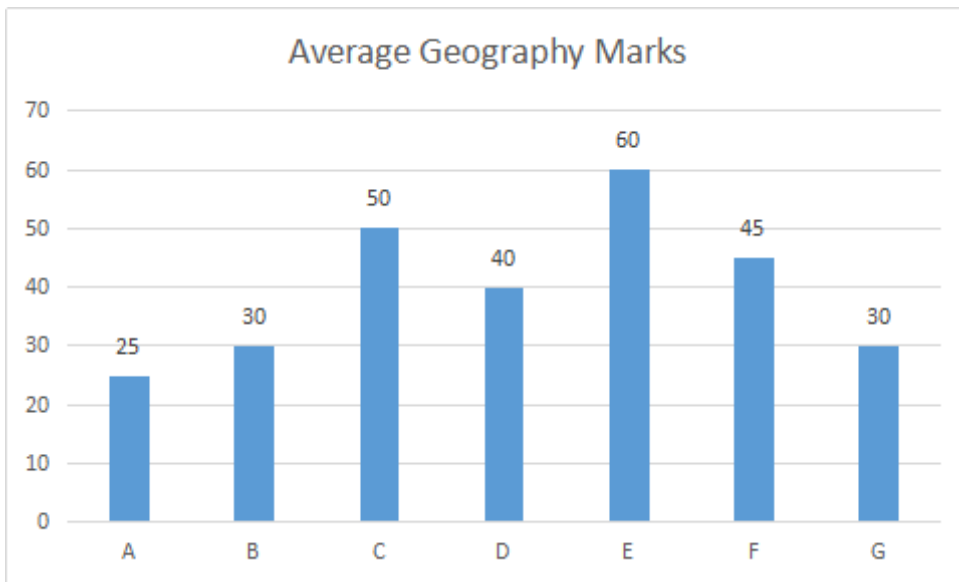
$$\therefore \text{ Time taken if he cycles both ways} = \frac{d}{y} + \frac{d}{y}$$

$$= 8.5 + 8.5 = 17 \text{ minutes}$$

$\Rightarrow$  Ans - (B)

### Instructions

The bar graph shows average marks scored in a 100 marks Geography exam by students of 7 divisions of Standard X. Study the diagram and answer the following questions.



**Question 92**

Which division scored the second highest average marks?

- A F
- B B
- C A
- D C

**Answer:** D

**Explanation:**

Marks when arranged in descending order are :  $60 > 50 > 45 > 40 > 30, 30 > 25$

Corresponding division is :  $E, C, F, D, B, G, A$

Thus, **C** division scored second highest marks.

=> Ans - (D)

**Question 93**

What is the ratio of average marks scored by Division C to Division G?

- A 3 : 5
- B 5 : 3
- C 6 : 5
- D 5 : 6

**Answer:** B

**Explanation:**

Average marks scored by Division C = 50

Average marks scored by Division G = 30

$$\Rightarrow \text{Required ratio} = \frac{50}{30} = 5 : 3$$

$\Rightarrow$  Ans - (B)

#### Question 94

Average marks of division A were lesser than that of Division C by \_\_\_\_\_

A 100%

B 150%

C 200%

D 50%

**Answer: D**

#### Explanation:

Marks scored by Division A = 25

Marks scored by Division C = 50

$$\Rightarrow \text{Required \%} = \frac{(50-25)}{50} \times 100$$

$$= 25 \times 2 = 50\%$$

$\Rightarrow$  Ans - (D)

#### Question 95

If all students of Division C got bonus 10 marks for winning the inter-school trophy their new average marks would increase by how much?

A 15%

B 25%

C 16.67%

D 20%

**Answer: D**

#### Explanation:

Current average marks of all students of Division C = 50

If all students of Division A got bonus 10 marks each, then new average marks =  $50+10 = 60$

$$\Rightarrow \text{Required \% increase} = \frac{(60-50)}{50} \times 100$$

$$= 10 \times 2 = 20\%$$

$\Rightarrow$  Ans - (D)

### Instructions

For the following questions answer them individually

### Question 96

The lengths of the two diagonals of a rhombus are 8 cm and 15 cm respectively. Find its area (*incm<sup>2</sup>*).

A 30

B 120

C 90

D 60

**Answer:** D

### Explanation:

Length of one diagonal = 8 cm and length of other diagonal = 15 cm

$$\Rightarrow \text{Area of rhombus} = \frac{1}{2} \times d_1 d_2$$

$$= \frac{1}{2} \times 8 \times 15$$

$$= 4 \times 15 = 60 \text{ cm}^2$$

$\Rightarrow$  Ans - (D)

### Question 97

Find the area (*incm<sup>2</sup>*) of a semi-circle of radius 35 cm.

A 3850

B 960

C 1920

D 1925

**Answer:** D

### Explanation:

Radius of semi circle =  $r = 35$  cm

$$\Rightarrow \text{Area of semi-circle} = \frac{1}{2} \pi r^2$$

$$= \frac{1}{2} \times \frac{22}{7} \times (35)^2$$

$$= 11 \times 5 \times 35 = 1925 \text{ cm}^2$$



=> Ans - (D)

**Question 98**

Find the total surface area ( $incm^2$ ) of a right circular cone of diameter 14 cm and slant height 10 cm.

A 374

B 570

C 428

D 524

**Answer: A**

**Explanation:**

Radius of cone,  $r = 7$  cm and slant height,  $l = 10$  cm

Total surface area of cone =  $\pi r(l + r)$

$$= \frac{22}{7} \times 7 \times (10 + 7)$$

$$= 22 \times 17 = 374 \text{ cm}^2$$

=> Ans - (A)

**Question 99**

$\triangle DEF$  is right angled at E. If  $m\angle D = 45^\circ$ , then find the value of  $(\tan F + 1/3)$ .

A  $\frac{4}{3}$

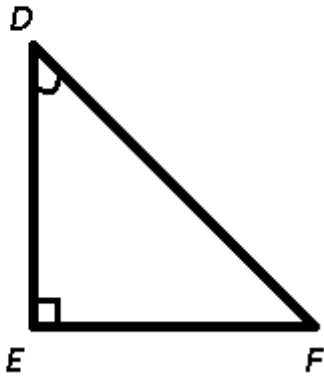
B  $\frac{3\sqrt{3}}{2}$

C  $\frac{(\sqrt{2}+1)}{\sqrt{2}}$

D  $\frac{(3\sqrt{2}+1)}{3}$

**Answer: A**

**Explanation:**



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

$$\Rightarrow 45^\circ + 90^\circ + \angle F = 180^\circ$$

$$\Rightarrow \angle F = 180^\circ - 135^\circ = 45^\circ$$

To find :  $(\tan F + \frac{1}{3})$

$$= \tan(45^\circ) + \frac{1}{3}$$

$$= 1 + \frac{1}{3} = \frac{4}{3}$$

$\Rightarrow$  Ans - (A)

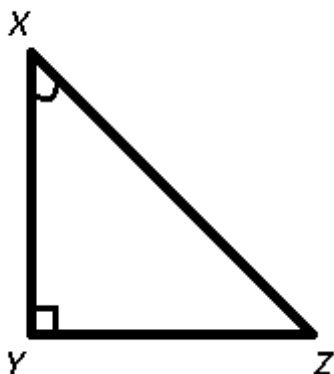
#### Question 100

In  $\triangle XYZ$  measure of angle Y is  $90^\circ$ . If  $\operatorname{cosec} X = \frac{17}{15}$ , and  $XY = 4\text{cm}$ , then what is the length (in cm) of side YZ?

- A 7.5
- B 8.5
- C 5
- D 6

Answer: A

Explanation:



Given :  $\operatorname{cosec} X = \frac{17}{15}$

Also,  $\operatorname{cosec} X = \frac{XZ}{YZ} = \frac{17}{15}$

Let  $XZ = 17x$  cm and  $YZ = 15x$  cm

Thus, in  $\triangle XYZ$ ,  $\Rightarrow (XY)^2 = (XZ)^2 - (YZ)^2$

$$\Rightarrow (XY)^2 = (17x)^2 - (15x)^2$$

$$\Rightarrow (XY)^2 = 289x^2 - 225x^2 = 64x^2$$

$$\Rightarrow XY = \sqrt{64x^2} = 8x \text{ cm}$$

According to ques,  $\Rightarrow 8x = 4$

$$\Rightarrow x = \frac{4}{8} = \frac{1}{2}$$

$$\therefore YZ = 15 \times \frac{1}{2} = 7.5 \text{ cm}$$

$\Rightarrow$  Ans - (A)