

**SSC CHSL 10 March 2018 Evening Shift**

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# Quant

## Instructions

For the following questions answer them individually

## Question 1

If the value of  $\sqrt{5} = 2.236$  then calculate the value of  $\sqrt{405} - \frac{1}{2}\sqrt{80} - \sqrt{125}$

- A 2.236
- B 4.472
- C 1.118
- D 8.994

Answer: B

### Explanation:

Given :  $\sqrt{5} = 2.236$

$$\begin{aligned} \text{To find : } & \sqrt{405} - \frac{1}{2}\sqrt{80} - \sqrt{125} \\ &= \sqrt{81 \times 5} - \frac{1}{2}\sqrt{16 \times 5} - \sqrt{25 \times 5} \\ &= 9\sqrt{5} - \frac{4}{2}\sqrt{5} - 5\sqrt{5} \\ &= 2\sqrt{5} = 2 \times 2.236 = 4.472 \\ \Rightarrow \text{Ans - (B)} \end{aligned}$$

## Question 2

1595 is the sum of the square of three consecutive odd numbers. Find the numbers.

- A 19, 21, 23
- B 17, 19, 21
- C 21, 23, 25
- D 23, 25, 27

Answer: C

### Explanation:

Let the three consecutive odd numbers be  $(x - 2), (x), (x + 2)$

According to ques,

$$\Rightarrow (x-2)^2 + (x)^2 + (x+2)^2 = 1595$$

$$\Rightarrow (x^2 - 4x + 4) + (x^2) + (x^2 + 4x + 4) = 1595$$

$$\Rightarrow 3x^2 + 8 = 1595$$

$$\Rightarrow 3x^2 = 1595 - 8 = 1587$$

$$\Rightarrow x^2 = \frac{1587}{3} = 529$$

$$\Rightarrow x = \sqrt{529} = 23$$

$\therefore$  Consecutive odd numbers are = 21, 23, 25

$\Rightarrow$  Ans - (C)

### Question 3

Determine the value of 'x' in  $x = \frac{1}{1+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \frac{1}{\sqrt{3}+2}$

**A** -1

**B** 0

**C** 1

**D** 2

Answer: C

### Explanation:

Expression :  $x = \frac{1}{1+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \frac{1}{\sqrt{3}+2}$

Rationalizing the denominator, we get :

$$= \left( \frac{1}{1+\sqrt{2}} \times \frac{\sqrt{2}-1}{\sqrt{2}-1} \right) + \left( \frac{1}{\sqrt{2}+\sqrt{3}} \times \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}-\sqrt{2}} \right) + \left( \frac{1}{\sqrt{3}+2} \times \frac{2-\sqrt{3}}{2-\sqrt{3}} \right)$$

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

$$= \frac{\sqrt{2}-1}{(2-1)} + \frac{\sqrt{3}-\sqrt{2}}{(3-2)} + \frac{2-\sqrt{3}}{(4-3)}$$

$$= (\sqrt{2}-1) + (\sqrt{3}-\sqrt{2}) + (2-\sqrt{3})$$

$$= 2-1 = 1$$

$\Rightarrow$  Ans - (C)

### Question 4

What is the value of  $z^2 + \frac{1}{z^2}$  when  $z = 5 + 2\sqrt{6}$

**A** 49

B 50

C 98

D 100

**Answer: C**

**Explanation:**

$$\text{Given : } z = 5 + 2\sqrt{6} \text{-----(i)}$$

$$\Rightarrow \frac{1}{z} = \frac{1}{5+2\sqrt{6}}$$

$$\Rightarrow \frac{1}{z} = \frac{1}{5+2\sqrt{6}} \times \left(\frac{5-2\sqrt{6}}{5-2\sqrt{6}}\right)$$

$$\Rightarrow \frac{1}{z} = \frac{5-2\sqrt{6}}{25-24} = 5-2\sqrt{6} \text{-----(ii)}$$

$$\text{To find : } z^2 + \frac{1}{z^2}$$

$$\text{Using, } x^2 + y^2 = (x+y)^2 - 2xy$$

$$= (z + \frac{1}{z})^2 - 2(z)(\frac{1}{z})$$

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

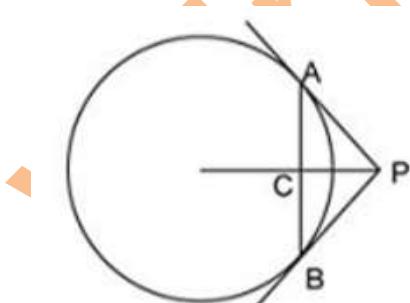
$$= [(5 + 2\sqrt{6}) + (5 - 2\sqrt{6})]^2 - 2(z)(\frac{1}{z})$$

$$= (10)^2 - 2 = 100 - 2 = 98$$

**Ans - (C)**

**Question 5**

The figure shown below consists of the tangents at the extremities of any chord. Choose the correct given below



A  $\angle PAC = \angle PBC$

B  $\angle APC = \angle BPC$

**C**  $\triangle PAC \cong \triangle PBC$

**D** All option are correct

**Answer:** D

**Explanation:**

In the given figure, PA and PB are tangents from the same point,  $\Rightarrow PA = PB$

Thus, in  $\triangle ABP$ ,  $\Rightarrow \angle PAC = \angle PBC$

Also,  $\angle APC = \angle BPC$  (perpendicular from centre to the chord bisects the chord and the angle between tangents)

$\Rightarrow \triangle PAC \cong \triangle PBC$  (By ASA criteria)

Thus, all options are correct.

$\Rightarrow$  Ans - (D)

**Question 6**

Calculate the angle subtended by the chord at the point on the major arc if the radius and the chord of circle are equal in length.

**A**  $30^\circ$

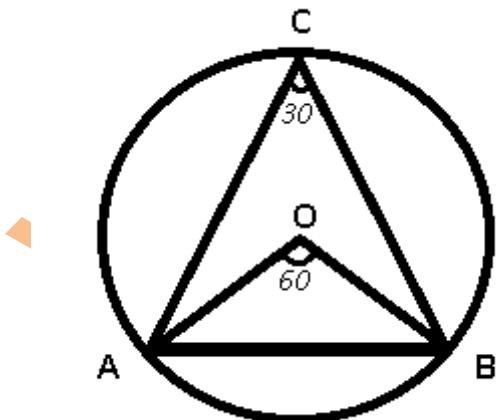
**B**  $120^\circ$

**C**  $200^\circ$

**D**  $300^\circ$

**Answer:** A

**Explanation:**



Given : Radius and the chord of the circle are equal in length.

To find :  $\angle ACB = ?$

Solution : It is given that the radius and the chord of the circle are equal in length.

$\Rightarrow OA = OB = AB$

$\Rightarrow AOB$  is an equilateral triangle,  $\Rightarrow \angle AOB = 60^\circ$

Now, the angle subtended by an arc at the centre is double the angle subtended by it at any point on the circle.

$\Rightarrow \angle ACB = \frac{60}{2} = 30^\circ$

$\Rightarrow$  Ans - (A)

### Question 7

If  $U = 450$  and  $V = 585$ , then  $V$  is how much percentage more than  $U$ ?

**A** 130

**B** 23.07

**C** 25

**D** 30

**Answer:** D

### Explanation:

$U = 450$  and  $V = 585$

$\Rightarrow$  Required % =  $\frac{(585-450)}{450} \times 100$

$= \frac{135}{4.5} = 30\%$

$\Rightarrow$  Ans - (D)

### Question 8

The ratio of two numbers is  $3 : 7$ . If their product is 1344, then what is the sum of both the numbers?

**A** 80

**B** 60

**C** 30

**D** 168

**Answer:** A

### Explanation:

Let the numbers be  $3x$  and  $7x$

$$\text{Product} = (3x) \times (7x) = 1344$$

$$\Rightarrow x^2 = \frac{1344}{21} = 64$$

$$\Rightarrow x = \sqrt{64} = 8$$

$$\therefore \text{Sum of numbers} = 3x + 7x = 10x$$

$$= 10 \times 8 = 80$$

$\Rightarrow$  Ans - (A)

#### Question 9

P and Q invested some money in a business in the ratio of 4 : 7 respectively. After 6 months P left his capital. If they receive profits in the ratio of 4 : 21, then for how many months did Q invest in the business?

A 12

B 15

C 18

D 21

**Answer:** C

#### Explanation:

Let P invested Rs. 4 for 6 months and Q invested Rs. 7 for  $x$  months

$$\Rightarrow \text{Ratio of profits of P:Q} = (4 \times 6) : (7 \times x)$$

According to ques,

$$\Rightarrow \frac{24}{7x} = \frac{4}{21}$$

$$\Rightarrow 7x \times 4 = 24 \times 21$$

$$\Rightarrow x = \frac{24 \times 21}{7 \times 4}$$

$$\Rightarrow x = 6 \times 3 = 18 \text{ months}$$

$\Rightarrow$  Ans - (C)

#### Question 10

A boy buys 5 pencils at Rs 3 each, 3 erasers at Rs 2 each and 3 sharpeners at Rs 5 each. What is the average expenditure (in Rs) per article?

A 3.27

B 3.5

C 4

**Answer:** A

**Explanation:**

Price of 5 pencils =  $5 \times 3 = \text{Rs. } 15$

Price of 3 erasers =  $3 \times 2 = \text{Rs. } 6$

Price of 3 sharpeners =  $3 \times 5 = \text{Rs. } 15$

$$\Rightarrow \text{Average expenditure} = \frac{15+6+15}{5+3+3}$$

$$= \frac{36}{11} = \text{Rs. } 3.27$$

$\Rightarrow$  Ans - (A)

**Question 11**

An equal sum is invested in two different schemes. One scheme gives simple interest and the other compound interest (annual compounding). The total interest obtained after 2 years from both the together is Rs 2090. If both the schemes have 18% per annum interest rate, then what is the first year interest (in Rs) of simple interest scheme?

**A** 1000

**B** 500

**C** 545

**D** 1045

**Answer:** B

**Explanation:**

Let sum invested in both schemes = Rs.  $100x$

Time period = 2 years and rate of interest in both schemes = 18%

$$\text{Total interest from both schemes} = \left( \frac{P \times R \times T}{100} \right) + [P \left( 1 + \frac{R}{100} \right)^T - P]$$

$$\Rightarrow \left( \frac{100x \times 18 \times 2}{100} \right) + [100x \left( 1 + \frac{18}{100} \right)^2 - 100x] = 2090$$

$$\Rightarrow (36x) + [100x \left( \frac{118}{100} \right)^2 - 100x] = 2090$$

$$\Rightarrow 36x + 139.24x - 100x = 2090$$

$$\Rightarrow 75.24x = 2090$$

$$\Rightarrow x = \frac{2090}{75.24} = 27.78$$

$$\therefore \text{Simple interest in 1st year} = \frac{(100 \times 27.78) \times 18 \times 1}{100}$$

$$= 27.78 \times 18 = 500.04 \approx \text{Rs. } 500$$

=> Ans - (B)

### Question 12

Two pens are bought at the rate of Rs 20 each. Shopkeeper sells one at the profit of 25% and other at loss of 25%. What will be the total profit or loss in the whole transaction?

- A No profit/loss
- B Profit of Rs 1
- C Loss of Rs 1
- D Loss of Rs 2

Answer: A

#### Explanation:

Cost price of each pen = Rs. 20

Profit % on 1st pen = 25%

$$\Rightarrow \text{Selling price of 1st pen} = 20 + \left( \frac{25}{100} \times 20 \right) = \text{Rs. } 25$$

$$\text{Similarly, selling price of 2nd pen after 25\% loss} = 20 - \left( \frac{25}{100} \times 20 \right) = \text{Rs. } 15$$

Thus, total cost price = Rs.  $(20 + 20) = \text{Rs. } 40$

and selling price = Rs.  $(25 + 15) = \text{Rs. } 40$

Thus, there is no profit or loss.

=> Ans - (A)

### Question 13

A merchant marks the price of his articles 30% above the cost price. He gives some discount on it and earns a profit of 13.75%. What is the discount percentage?

- A 12.5
- B 13.75
- C 16.25
- D 10.25

Answer: A

#### Explanation:

Let cost price = Rs.  $100x$

Profit % = 13.75%

$$\Rightarrow \text{Selling price} = 100x + \left( \frac{13.75}{100} \times 100x \right) = \text{Rs. } 113.75x$$

$$\text{Also, marked price} = 100x + \left( \frac{30}{100} \times 100x \right) = \text{Rs. } 130x$$

$$\therefore \text{Discount \%} = \frac{(130x - 113.75x)}{130x} \times 100$$

$$= \frac{162.5}{13} = 12.5\%$$

$\Rightarrow$  Ans - (A)

#### Question 14

What is the value of  $\sqrt[3]{1331} + \sqrt{729} - \sqrt[3]{512}$ ?

A 15

B 20

C 30

D 23

Answer: C

#### Explanation:

$$\text{Expression : } \sqrt[3]{1331} + \sqrt{729} - \sqrt[3]{512}$$

$$= \sqrt[3]{11 \times 11 \times 11} + 27 - \sqrt[3]{8 \times 8 \times 8}$$

$$= 11 + 27 - 8 = 30$$

$\Rightarrow$  Ans - (C)

#### Question 15

Manish is four times as efficient as Puneet. Manish takes 90 days less than Puneet to complete a book. both of them work together, then in how many days the book will be completed?

A 28

B 25

C 24

D 30

Answer: C

#### Explanation:

Ratio of times taken by Manish and Puneet = 1 : 4

The time difference is (4 - 1) 3 days while Puneet takes 4 days and Manish takes 1 day.

If difference of time is 3 days, Puneet takes 4 days.

If difference of time is 90 days, Puneet takes =  $\frac{4}{3} \times 90 = 120$  days

So, Manish takes 30 days

Manish's 1 day's work =  $\frac{1}{30}$

Puneet's 1 day's work =  $\frac{1}{120}$

(Manish + Puneet)'s 1 day's work together =  $\frac{1}{30} + \frac{1}{120} = \frac{5}{120} = \frac{1}{24}$

∴ Manish and Puneet together can do the work in = **24 days**

=> Ans - (C)

### Question 16

A man starts walking from a place X and reaches the place Y in 12 hours. He travels  $\frac{3}{7}$ th of the total distance at the speed of 3 km/hr and the remaining distance at the speed of 4 km/hr. What is the (in km) between X and Y?

**A** 28

**B** 36

**C** 40

**D** 42

**Answer:** D

#### Explanation:

Let total distance between X and Y =  $7d$  km

=> Distance travelled at the speed of 3 km/hr =  $\frac{3}{7} \times 7d = 3d$  km

Thus, distance travelled at the speed of 4 km/hr =  $7d - 3d = 4d$  km

Total time taken = 12 hours

Using, time = distance/speed

=>  $\frac{3d}{3} + \frac{4d}{4} = 12$

=>  $d + d = 2d = 12$

=>  $d = \frac{12}{2} = 6$

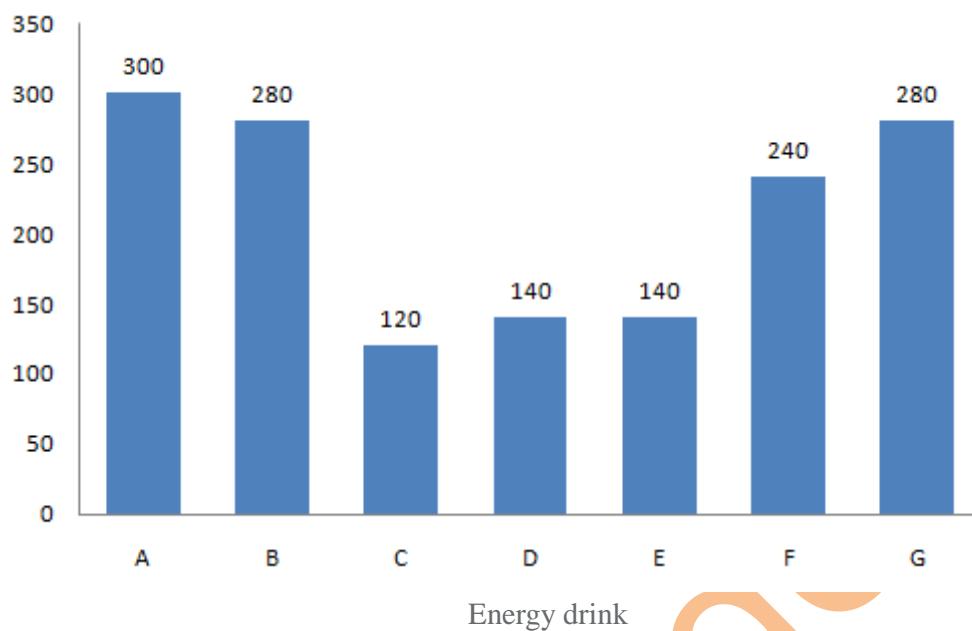
∴ Total distance between X and Y =  $7 \times 6 = 42$  km

=> Ans - (D)

## Instructions

The bar graph shows results of a survey carried out within a health club. The members of the club were asked which energy drink they consumed? Study the diagram and answer the following questions.

Number of consumers



## Question 17

Which energy drink was consumed the least?

- A A
- B C
- C D
- D E

Answer: B

### Explanation:

Clearly, energy drink C was consumed the least = by 120 consumers

=> Ans - (B)

## Question 18

What is the ratio of consumers of energy drink C to consumers of energy drink G?

- A 7 : 3

**B** 3 : 7

**C** 5 : 9

**D** 9 : 5

**Answer:** B

**Explanation:**

Consumers of energy drink C = 120

Consumers of energy drink G = 280

$$\Rightarrow \text{Required ratio} = \frac{120}{280} = 3 : 7$$

$\Rightarrow$  Ans - (B)

**Question 19**

Consumers of drink B are greater than that of drink E by \_\_\_\_\_.

**A** 50%

**B** 100%

**C** 200%

**D** 150%

**Answer:** B

**Explanation:**

Consumers of energy drink B = 280

Consumers of energy drink E = 140

$$\Rightarrow \text{Required \%} = \frac{(280-140)}{140} \times 100 = 100\%$$

$\Rightarrow$  Ans - (B)

**Question 20**

If 40% of consumers of drink C start consuming drink F then the consumers of drink F would increase by \_\_\_\_\_.

**A** 20%

**B** 40%

C 48%

D 24%

**Answer:** A

**Explanation:**

Consumers of energy drink C = 120

Consumers that left C and started F =  $\frac{40}{100} \times 120 = 48$

Consumers of energy drink F = 240

$\Rightarrow$  % increase in consumers =  $\frac{48}{240} \times 100$

$= \frac{48}{2.4} = 20\%$

$\Rightarrow$  Ans - (A)

**Instructions**

For the following questions answer them individually

**Question 21**

**The area of an equilateral triangle is  $25\sqrt{3} \text{ cm}^2$ . Find its side (in cm).**

A 10

B 5

C 20

D 30

**Answer:** A

**Explanation:**

Let side of equilateral triangle =  $s \text{ cm}$

$\Rightarrow$  Area =  $\frac{\sqrt{3}}{4}s^2 = 25\sqrt{3}$

$\Rightarrow \frac{s^2}{4} = 25$

$\Rightarrow s^2 = 25 \times 4 = 100$

$\Rightarrow s = \sqrt{100} = 10 \text{ cm}$

$\Rightarrow$  Ans - (A)

**Question 22**

**Calculate the area (in  $\text{cm}^2$ ) of a circle of radius 17.5 cm.**

A 1925

B 962.5

C 809.5

D 1619

**Answer:** B

**Explanation:**

Radius of circle =  $r = 17.5$  cm

$$\Rightarrow \text{Area} = \pi r^2$$

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

$$= 22 \times 2.5 \times 17.5 = 962.5 \text{ cm}^2$$

$\Rightarrow$  Ans - (B)

**Question 23**

Find the total surface area (in  $\text{cm}^2$ ) of a right circular cone of diameter 21 cm and slant height 11 cm.

A 467.5

B 384

C 724

D 709.5

**Answer:** D

**Explanation:**

Radius of cone,  $r = \frac{21}{2} = 10.5$  cm and slant height,  $l = 11$  cm

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

$$= \frac{22}{7} \times 10.5 \times (10.5 + 11)$$

$$= 33 \times 21.5 = 709.5 \text{ cm}^2$$

$\Rightarrow$  Ans - (D)

**Question 24**

What is the value of  $(\text{cosec}45^\circ + \sqrt{3}/2)$  ?

A 5/6

B  $(4+\sqrt{3})/2\sqrt{3}$

C  $(2\sqrt{2}+\sqrt{3})/2$

D  $3\sqrt{3}/2$

Answer: C

**Explanation:**

$$\text{Expression : } (\cosec 45^\circ + \frac{\sqrt{3}}{2})$$

$$= (\sqrt{2} + \frac{\sqrt{3}}{2})$$

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

$\Rightarrow$  Ans - (C)

**Question 25**

In  $\Delta ABC$  measure of angle B is  $90^\circ$ . If  $\tan A = 15/8$ , and  $AB = 0.8\text{cm}$ , then what is the length (in cm) of AC?

A 1.7

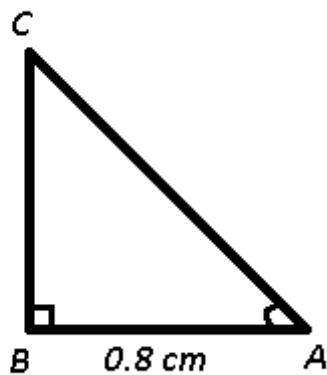
B 1.5

C 2

D 2.5

Answer: A

**Explanation:**



Given :  $AB = 0.8\text{ cm}$  and  $\tan A = 15/8$

To find :  $AC = ?$

Solution : In right  $\Delta ABC$ ,

$$\Rightarrow \tan(A) = \frac{BC}{AB}$$

$$\Rightarrow \frac{15}{8} = \frac{BC}{0.8}$$

$$\Rightarrow BC = \frac{15}{8} \times 0.8 = 1.5 \text{ cm}$$

$$\therefore (AC)^2 = (AB)^2 + (BC)^2$$

$$\Rightarrow (AC)^2 = (0.8)^2 + (1.5)^2$$

$$\Rightarrow (AC)^2 = 0.64 + 2.25 = 2.89$$

$$\Rightarrow AC = \sqrt{2.89} = 1.7 \text{ cm}$$

$\Rightarrow$  Ans - (A)

## Reasoning

### Instructions

For the following questions answer them individually

### Question 26

In the following question, select the related word pair from the given alternatives. Square : Four :: ? : ?

- A Triangle : Five
- B Rectangle : Four
- C Octagon : Seven
- D Circle : Five

Answer: B

### Explanation:

Expression = Square: Four :: ? : ?

The first is the polygon and the second is number of its sides, i.e. a square has 4 sides, similarly a rectangle has 4 sides.

$\Rightarrow$  Ans - (B)

### Question 27

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

18 : 11 :: ? : ?

- A 33 : 29

B 36 : 29

C 41 : 33

D 49 : 41

**Answer:** B

**Explanation:**

Expression = 18 : 11 :: ? : ?

The difference between the numbers =  $18 - 11 = 7$

Similarly, only the difference between  $36 - 29 = 7$

=> Ans - (B)

**Question 28**

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

MPR : LOQ :: KST : ?

A JPQ

B LRS

C JPT

D JRS

**Answer:** D

**Explanation:**

Expression = MPR : LOQ :: KST : ?

The pattern followed is :

M	P	R
(-1)	(-1)	(-1)
L	O	Q

Similarly, for KST : **JRS**

K	S	T
(-1)	(-1)	(-1)
J	R	S

=> Ans - (D)

**Question 29**

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

A Lungs

B Nose

C Heart

D Kidney

**Answer:** B

**Explanation:**

Lungs, Heart and kidney are internal organs of a body, hence **nose** is the odd one out.

=> Ans - (B)

**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 13 - 26

B 15 - 30

C 17 - 34

D 19 - 31

**Answer:** D

**Explanation:**

The second number is equal to two times the first number.

$$13 \times 2 = 26$$

$$15 \times 2 = 30$$

$$17 \times 2 = 34$$

$$19 \times 2 = 38 \neq 31$$

=> Ans - (D)

**Question 31**

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

A TQNK

**B** URNM

**C** VSPM

**D** LIFC

**Answer:** B

**Explanation:**

(A) : T (-3 letters) = Q (-3 letters) = N (-3 letters) = K

(B) : U (-3 letters) = R (-4 letters) = N (-1 letter) = M

(C) : V (-3 letters) = S (-3 letters) = P (-3 letters) = M

(D) : L (-3 letters) = I (-3 letters) = F (-3 letters) = C

=> Ans - (B)

**Question 32**

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

- 1.** Attempt
- 2.** Alert
- 3.** Attach
- 4.** Assistant
- 5.** Assume

**A** 13452

**B** 24531

**C** 42531

**D** 53412

**Answer:** B

**Explanation:**

As per the order of dictionary :

= Alert -> Assistant -> Assume -> Attach -> Attempt

≡ 24531

=> Ans - (B)

**Question 33**

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

13, 17, 26, 42, 67, ?

A 99

B 90

C 103

D 94

**Answer:** C

**Explanation:**

Squares of consecutive integers are added.

$$13 + (2)^2 = 17$$

$$17 + (3)^2 = 26$$

$$26 + (4)^2 = 42$$

$$42 + (5)^2 = 67$$

$$67 + (6)^2 = \mathbf{103}$$

=> Ans - (C)

**Question 34**

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

FN, KL, PJ, ?, ZF

A SH

B RG

C VG

D UH

**Answer:** D

**Explanation:**

Series : FN, KL, PJ, ?, ZF

The pattern followed in each letter of the terms is :

1st letter : F (+5 letters) = K (+5 letters) = P (+5 letters) = U (+5 letters) = Z

2nd letter : N (-2 letters) = L (-2 letters) = J (-2 letters) = H (-2 letters) = F

Thus, missing term = **UH**

=> Ans - (D)

### Question 35

In a row, Mohini is at 23rd position from left and 37th position from right. How many girls are there in row?

- A 60
- B 61
- C 59
- D 58

Answer: C

### Explanation:

Mohini's position from left end = 23rd

Mohini's position from right end = 37th

=> Total number of girls =  $(23 + 37) - 1 = 59$

=> Ans - (C)

### Question 36

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

- A Rand
- B And
- C Grade
- D Faith

Answer: D

### Explanation:

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

=> Ans - (D)

### Question 37

In a certain code language, "MUTE" is written as "60" and "TYRE" is written as "69". How is "HYPE" in that code language?

- A 55

**B** 60

**C** 54

**D** 52

**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.

Then the numbers are added and '1' is added to get the final output.

Eg :- MUTE =  $(13 + 21 + 20 + 5) + 1 = 59 + 1 = 60$

TYRE =  $(20 + 25 + 18 + 5) + 1 = 68 + 1 = 69$

Similarly, HYPE =  $(8 + 25 + 16 + 5) + 1 = 54 + 1 = 55$

=> Ans - (A)

**Question 38**

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

AMJ, DPM, GSP, ?, MYV

**A** JUT

**B** KVT

**C** JVS

**D** KUS

**Answer:** C

**Explanation:**

Series : AMJ, DPM, GSP, ?, MYV

The pattern followed in each letter of the terms is :

1st letter : A (+3 letters) = D (+3 letters) = G (+3 letters) = J (+3 letters) = M

2nd letter : M (+3 letters) = P (+3 letters) = S (+3 letters) = V (+3 letters) = Y

3rd letter : J (+3 letters) = M (+3 letters) = P (+3 letters) = S (+3 letters) = V

Thus, missing term = **JVS**

=> Ans - (C)

### Question 39

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

119, 121, 124, 128, ?, 139

- A 130
- B 133
- C 131
- D 132

**Answer:** B

#### Explanation:

Consecutive integers are added.

$$119 + 2 = 121$$

$$121 + 3 = 124$$

$$124 + 4 = 128$$

$$128 + 5 = \mathbf{133}$$

$$133 + 6 = 139$$

$\Rightarrow$  Ans - (B)

### Question 40

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 (113, 109, 105)
- B (142, 137, 133)
- C (197, 193, 189)
- D (162, 158, 154)

**Answer:** B

#### Explanation:

The numbers are of the form :  $(x, x - 4, x - 8)$

But in the second option, we have =  $142 - 4 = 138 \neq 137$  and  $142 - 8 = 134 \neq 133$

Thus, (142, 137, 133) is the odd one out.

$\Rightarrow$  Ans - (B)

#### Question 41

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

$$23 \times 20 \div 35 - 2 + 10 = ?$$

- A 19
- B 10
- C 16
- D 20

**Answer:** B

#### Explanation:

$$\text{Expression : } 23 \times 20 \div 35 - 2 + 10 = ?$$

$$\equiv 23 - 20 + 35 \times 2 \div 10$$

$$= 3 + \frac{70}{10}$$

$$= 3 + 7 = 10$$

$\Rightarrow$  Ans - (B)

#### Question 42

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

$$17 - 20 \div 25 \times 6 + 10 = 12$$

- A  $\div$  and  $+$
- B  $\div$  and  $\times$
- C  $+$  and  $-$
- D  $\times$  and  $-$

**Answer:** A

#### Explanation:

$$\text{Expression : } 17 - 20 \div 25 \times 6 + 10 = 12$$

(A)  $\div$  and  $+$

$$\equiv 17 - 20 + 25 \times 6 \div 10 = 12$$

$$\text{L.H.S.} = 17 - 20 + \left( \frac{25 \times 6}{10} \right)$$

$$= -3 + 15 = 12 = \text{R.H.S.}$$

=> Ans - (A)

#### Question 43

If  $9*4 = 26$ ,  $4*4 = 16$  and  $3*6 = 18$ , then find the value of  $5*2 = ?$

- A 13
- B 14
- C 17
- D 26

Answer: B

#### Explanation:

Given :  $9*4 = 26$ ,  $4*4 = 16$  and  $3*6 = 18$

If we replace '\*' with '+', and multiply the sum by 2, we get the desired result.

$$\text{Eg} : -(9 + 4) \times 2 = 26$$

$$\text{and } (4 + 4) \times 2 = 16 \text{ and } (3 + 6) \times 2 = 18$$

$$\text{Similarly, } (5 + 2) \times 2 = 14$$

=> Ans - (B)

#### Question 44

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

RQPQPQPQ, PSPQPQPQ, PQRQPQPQ, PQPSPQPQ, PQPQRQPQ, \_\_\_\_\_.

- A PQPQPQPQ
- B RQPQPQPQ
- C PQPQPSPQ
- D PSPQPQPQ

Answer: C

#### Explanation:

Expression : RQPQPQPQ, PSPQPQPQ, PQRQPQPQ, PQPSPQPQ, PQPQRQPQ, \_\_\_\_\_.

The above series is a combination of 4 'PQ', but in each alternative term starting from the left, P is replaced by R and in the even number of terms, Q is replaced by S in increasing order.

Thus, in the missing term (6th term), 3rd Q is replaced by S = **PQPQPSPQ**

=> Ans - (C)

#### Question 45

Two pickup trucks X and Y start from the same place. Truck X travels East 15 km and then turns right travels 8 km. In the meanwhile truck Y travels 7 km West, then 3 km North, then 2 km West , then it turns left and travels 11 km. Where is truck Y with respect to truck X?

- A 6 km West
- B 24 km East
- C 6 km East
- D 24 km West

**Answer:** D

#### Question 46

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 statements.

**Statement I:** All magazines are papers

**Statement II:** Some tabloids are magazines

**Conclusion I:** Some papers are tabloids

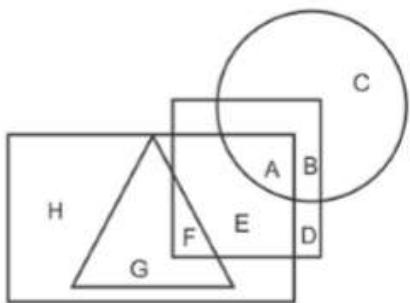
**Conclusion II:** Some tabloids are papers

- 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:** C

Question 47

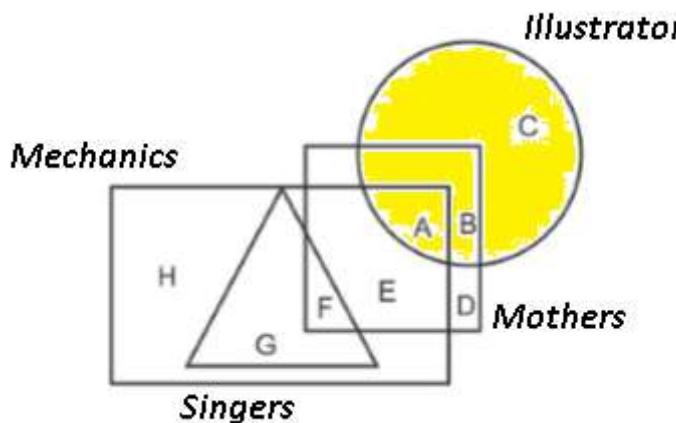
In the following figure, rectangle represents Mechanics, circle represents Illustrators, triangle represents Singers and square represents Mothers. Which set of letters represents Illustrators who are not Singers?



- A FG
- B ED
- C BC
- D ABC

Answer: D

Explanation:

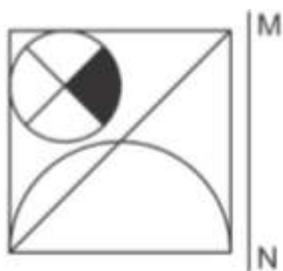


Illustrators who are not Singers = A + B + C

$\Rightarrow$  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

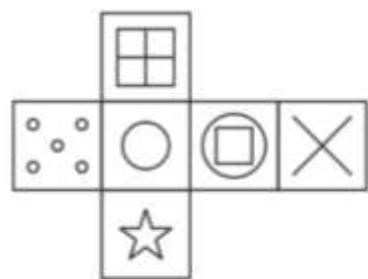


- A
- B
- C
- D

**Answer: D**

**Question 49**

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



- A



Answer: B

#### 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 S to 9. A letter from these matrices can be represented first by its row and next by its column, for example '1' can be represented by 23, 41 etc and 'R' can be represented by 65, 57 etc. Similarly, you have identify the set for the word 'DOPE'.

Matrix - I					
	0	1	2	3	4
0	K	A	J	D	H
1	D	C	B	K	I
2	D	F	F	J	E
3	E	C	D	I	C
4	I	J	I	M	I

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

A 41,89,10,87  
B 32,96,13,69  
C 32,58,77,30  
D 34,96,32,57

Answer: C

#### Explanation:

(A) : 41,89,10,87 = JNDV  
(B) : 32,96,13,69 = DSKT  
(C) : 32,58,77,30 = DOPE  
(D) : 34,96,32,57 = CSDR

=> Ans - (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 51

**Although he (a)/ studied regularly, (b)/ his marks didn't improving. (c)/ No error (d)**

- A** Although he
- B** studied regularly
- C** his marks didn't improving
- D** No error

**Answer: C**

### Question 52

**Buddhism originated in Ancient India around 6th and 4th (a)/ centuries BCE, from where it spread most (b)/ of Asia, and then it declines in India during the Middle Ages.  
(c)/ No error (d)**

- A** Buddhism originated in Ancient India around 6th and 4th
- B** centuries BCE, from where it spread through most
- C** of Asia, and then it declines in India during the Middle Ages
- D** No error

**Answer: C**

### 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**

Is the lipstick natural or \_\_\_\_\_?

- A** artificial
- B** daydream
- C** unreal
- D** vulnerable

**Answer:** A

**Question 54**

In the court of god we will be judged by our action and \_\_\_\_\_.

- A** steeds
- B** bleed
- C** gleeds
- D** deeds

**Answer:** D

**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**

**Laconic**

- A** Brief
- B** Verbose
- C** Lengthy
- D** Unabridged

**Answer:** A

**Question 56****Propitious**

- A** Luxurious
- B** Pitiful
- C** Sad
- D** Hopeful

**Answer: D****Instructions**

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

**Question 57****Mellow**

- A** Ripe
- B** Mature
- C** Rich
- D** Hard

**Answer: D****Question 58****Exhume**

- A** Dig
- B** Reveal
- C** Hide
- D** Resurrect

**Answer: C**

## Instructions

For the following questions answer them individually

### Question 59

Rearrange the parts of the sentence in correct order.

For ages,

P : the Indian psyche has been

Q : geared towards devoting one's life

R : to the welfare of all

A PQR

B RPQ

C QPR

D PRQ

Answer: A

### 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.

My cousin has written this essay.

A This essay has been written by my cousin.

B This essay was written by my cousin.

C This essay has been wrote by my cousin.

D My cousin wrote this essay.

Answer: A

### 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.

“Don’t you know the way to home?” asked the lady.

A The lady asked why he didn’t know the way to home.

- B The lady asked whether he didn't knew the way to home.
- C The lady asked about the way to home.
- D The lady asked why he doesn't know the way to home.

**Answer:** B

#### **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 Foreign
- B Forien
- C Foriegn
- D Foreing

**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.

It is a proverbial \_\_\_\_\_, that every one makes his own destiny; and \_\_\_\_\_ is usually interpreted, that every one, by his wise \_\_\_\_\_ unwise conduct, prepares good or evil for himself: but we may also understand it, that whatever it be that he receives \_\_\_\_\_ the hand of Providence, he may so accommodate \_\_\_\_\_ to it, that he will find his lot good for him, however much may seem to others to be wanting.

#### **Question 63**

**It is a proverbial \_\_\_\_\_, that every one makes**

- A say
- B said
- C saying
- D says

**Answer:** C

**Question 64**

own destiny; and \_\_\_\_\_ is usually interpreted,

- A these
- B this
- C those
- D here

**Answer:** B

**Question 65**

by his wise \_\_\_\_\_ unwise conduct,

- A or
- B but also
- C but
- D nor

**Answer:** A

**Question 66**

that he receives \_\_\_\_\_ the hand of Providence,

- A form
- B from
- C of
- D for

**Answer:** B

**Question 67**

so accommodate \_\_\_\_\_ to it, that he

A he

B his

C himself

D him

**Answer: C**

### **Instructions**

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

### **Question 68**

#### **Come true**

A Pray hard for your wishes.

B To happen in the way you had hoped.

C Day dream about success.

D Be finally proved that you were right.

**Answer: B**

### **Question 69**

#### **Great minds think alike**

A When an evil plan is hatched criminals agree.

B Said to those people who don't like each other to make them agree.

C Said when two people have the same opinion or make the same choice.

D Intelligent people will think of plans to which everybody will say yes.

**Answer: C**

### **Instructions**

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

### Question 70

An urgent need or demand

- A Vindication
- B Satiety
- C Redress
- D Exigency

Answer: D

### Question 71

Believe in and follow the practices of

- A Atheist
- B Pagan
- C Agnostic
- D Adhere

Answer: D

### 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

We have lost the magic of living, and (is mired) in numbers.

- A was mired
- B to mire
- C are mired
- D no improvement

Answer: C

### Question 73

There is something in a train journey that (was fascinated) a lot of people and I am one of them.

- A has fascinated
- B have fascinated
- C has fascinate
- D no improvement

**Answer:** A

### 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.

On the speech front, we

A-can all do something individually

B-idiom of communication

C-if we change our

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

**Answer:** C

### Question 75

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

- A monopoly
- B iliterate
- C monnopoly

D monopoly

**Answer:** A

## General Awareness

### Instructions

For the following questions answer them individually

### Question 76

"Residex Index" is associated with which of these?

- A Share Prices
- B Mutual Fund Prices
- C Price Inflation Index
- D Housing Prices

**Answer:** D

### Question 77

For internal financing of Five Year Plans, the Government depends on

\_\_\_\_\_.

- A taxation and public borrowing
- B taxation, public borrowing and deficit financing
- C Only taxation
- D public borrowing and deficit financing

**Answer:** D

### Question 78

In which language were the Buddhist literary works generally written?

- A Prakrit

**B** Pali

**C** Nepalese

**D** Sanskrit

**Answer:** B

**Question 79**

**Which of the following rebellion / agitation did NOT happen in the area of Bengal?**

**A** Sannyasi Rebellion

**B** Chuar Rebellion

**C** Pagal Panthi rebellion

**D** Baghera Rebellion

**Answer:** D

**Question 80**

**Which of the following cities is closest to the Equator?**

**A** Colombo

**B** Jakarta

**C** Manila

**D** Singapore

**Answer:** D

**Question 81**

**Which of the following states has NOT met the boundary with Mizoram?**

**A** Nagaland

**B** Myanmar

**C** Assam

**D** Tripura

**Answer:** A

**Question 82**

**Who among the following is NOT a famous dancer of Bharatanatyam?**

**A** Rukmini Devi Arundale

**B** T. Balasaraswati

**C** Yamini Krishnamurthy

**D** Jhaveri sisters

**Answer:** D

**Question 83**

**At which place the first BIMSTEC Disaster Management Exercise 2017 (BIMSTEC DMEx 2017), held in October 2017?**

**A** Dhaka

**B** Colombo

**C** Delhi

**D** Male

**Answer:** C

**Question 84**

**Who is the recipient of first Life time Achievement award instituted by Badminton Association of India?**

**A** G.S.S.V.Prasad

**B** Nandu Patekar

**C** P. Gopichand

D Prakash Padukone

**Answer:** D

**Question 85**

Most of population in Sri Lanka follows \_\_\_\_\_.

A Hinduism

B Islam

C Christianity

D Buddhism

**Answer:** D

**Question 86**

What is the relative molecular mass of water?

A 8 u

B 9 u

C 16 u

D 18 u

**Answer:** D

**Question 87**

What is the pH value of human blood?

A 8.3

B 6.8

C 7.4

D 6

**Answer:** C

**Question 88**

**In India, who is known as the highest law officer?**

- A** President of India
- B** Attorney General of India
- C** Comptroller and Auditor General of India
- D** Advocate General of the State

**Answer: B**

**Question 89**

**According to the Indian Constitution, the Union \_\_\_\_\_ body is called the Parliament.**

- A** Judicial
- B** Executive
- C** Legislative
- D** both Judicial and legislative

**Answer: C**

**Question 90**

**Which is NOT an example of organism that breaks down the food material outside the body and then absorb it?**

- A** Bread moulds
- B** Yeast
- C** Mushrooms
- D** Snake

**Answer: D**

**Question 91**

**Each trait in the child can be influenced by \_\_\_\_\_ DNA.**

- A** only paternal
- B** only maternal
- C** both paternal and maternal
- D** neither paternal nor maternal

**Answer:** C

#### **Question 92**

**Who launched Pradhan Mantri Vaya Vandana Yojana (PMVVY) in July 2017?**

- A** Rajnath Singh
- B** Arun Jaitley
- C** Suresh Prabhu
- D** Nirmala Sitharaman

**Answer:** B

#### **Question 93**

**Which organisation has installed India's largest floating solar photovoltaic plant in Kerala?**

- A** Nuclear Power Corporation of India
- B** Power grid Corporation of India
- C** National Hydroelectric Power Corporation
- D** National Thermal Power Corporation

**Answer:** D

#### **Question 94**

**'ICAR' launched National Agricultural Higher Education Project (NAHEP) in association with World Bank. Where is ICAR (Indian Council of Agricultural Research) located?**

- A Mumbai
- B Patna
- C Bengaluru
- D New Delhi

**Answer:** D

#### **Question 95**

**On 19 September 2017, Law Ministry approved Fugitive Economic Offenders Bill, 2017. The Bill entrusts the responsibility to try cases of Fugitive Economic Offenders under \_\_\_\_\_.**

- A Prevention of Money Laundering Act, 2002 (PMLA)
- B Prevention of Money Laundering Act, 2005
- C Prevention of Money Laundering Act, 2010
- D Prevention of Money Laundering Act, 1995

**Answer:** A

#### **Question 96**

**Due to an acceleration of  $4 \text{ m/s}^2$  the velocity of a body increases from  $10 \text{ m/s}$  to  $30 \text{ m/s}$  in a certain period. Find the displacement (in m) of the body in that period.**

- A 200
- B 250
- C 100
- D 125

**Answer:** C

#### **Question 97**

**The area under a Velocity-Time graph represents \_\_\_\_\_.**

- A distance
- B acceleration
- C force
- D momentum

Answer: A

#### Question 98

A \_\_\_\_\_ is known by different names in different parts of the world.  
It is called a 'hurricane' in North America.

- A funnel
- B whirlpool
- C cyclone
- D twister

Answer: C

#### Question 99

Which of the statements given below are correct?  
A) Alexander Norén won the Golf 2017 Masters Tournament.  
B) In 2017, Daniel Ricciardo raced in Formula One for Mercedes.  
C) In 2017 Pro Kabaddi League, Suraj Desai played for Jaipur Pink Panthers.

- A Only A
- B Only B
- C B and C
- D None of these

Answer: D

#### Question 100

In \_\_\_\_\_ layout headings can be displayed hiding the text under them in Microsoft Word.

**A** Web

**B** Outline

**C** Reading

**D** Print

**Answer:** B

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