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# SSC GD Exam

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Simplifying  
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# Reasoning

## Instructions

For the following questions answer them individually

### Question 1

If the alphabets are numbers the sum of which 5 alphabets is 51.

- A AEOIT
- B AIOEJ
- C AOUEH
- D AIOEU

**Answer:** D

### Explanation:

(A) : AEOIT ;  $1 + 5 + 15 + 9 + 20 = 50$

(B) : AIOEJ ;  $1 + 9 + 15 + 5 + 10 = 40$

(C) : AOUEH ;  $1 + 15 + 21 + 5 + 8 = 50$

(D) : AIOEU ; ;  $1 + 9 + 15 + 5 + 21 = 51$

=> Ans - (D)

## Instructions

Find the odd word/letter/number from the given alternatives.

### Question 2

- A YVX
- B QNO
- C EBD
- D IFH

**Answer:** B

### Explanation:

(A) :  $Y (-3) = V (+2) = X$

(B) :  $Q (-3) = N (+1) = O$

(C) :  $E (-3) = B (+2) = D$

(D) :  $I (-3) = F (+2) = H$

=> Ans - (B)

### Question 3

- A 424
- B 631
- C 432
- D 460

**Answer:** C

**Explanation:**

Except the third option, sum of digits of rest of the numbers is same.

(A) : 424 ;  $4 + 2 + 4 = 10$

(B) : 631 ;  $6 + 3 + 1 = 10$

(C) : 432 ;  $4 + 3 + 2 = 9$

(D) : 460 ;  $4 + 6 + 0 = 10$

=> Ans - (C)

**Question 4**

**A** Triangle

**B** Cube

**C** Square

**D** Trapezium

**Answer:** B

**Explanation:**

Triangle, square and trapezium are two dimensional figures, hence **cube** being a 3-D figure is the odd one.

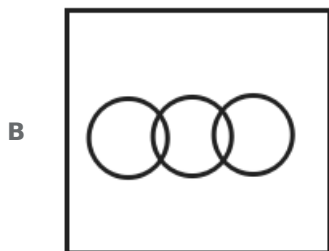
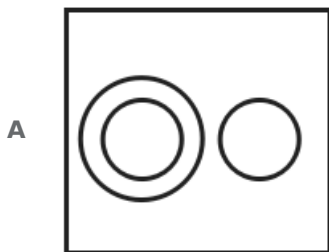
=> Ans - (B)

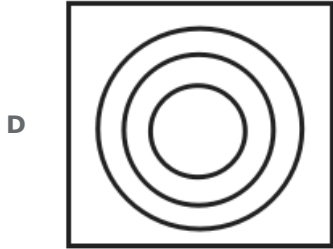
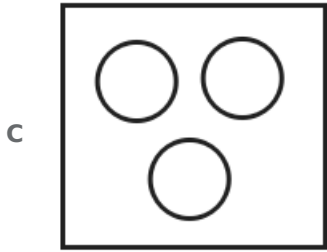
**Instructions**

For the following questions answer them individually

**Question 5**

**Which figure represents the relation amongst rose, flower and leaves.**

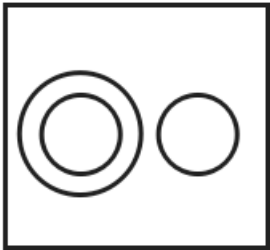




**Answer:** A

**Explanation:**

Roses comes under the category of flowers, but leaves are different, hence the venn diagram that best describes above relation is :



=> Ans - (A)

**Question 6**

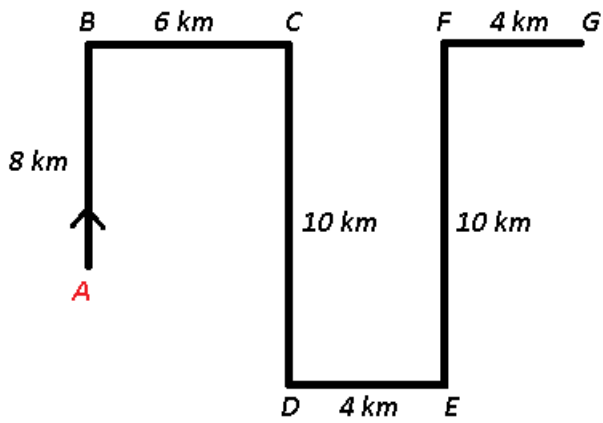
Raghu starts from his house in his car and travels 8 km towards the North, then 6 km towards East, then 10 km towards his right, 4 km towards his left, 10 km toward north and finally 4 km towards his right. In which direction is he now with reference to the starting point ?

- A North
- B South-East
- C South
- D North-East

**Answer:** D

**Explanation:**

Raghu starts from his house in his car at A and travels 8 km towards the North to B, then 6 km towards East to reach C, then 10 km towards his right towards south, 4 km towards his left in the east direction, 10 km toward north to reach F and finally 4 km towards his right to stop at point G.



∴ He is now in **North-East** direction with reference to the starting point.

=> Ans - (D)

### Instructions

A series is given, with one/two terms missing. Choose the correct alternative from the given ones that will complete the series.

### Question 7

**A, Z, B, Y, C, X, D, W, E, V, F, U, G, ?**

**A** T

**B** R

**C** V

**D** S

**Answer:** A

### Explanation:

Above series is a combination of two alternate series, one being in increasing order and other in reverse order according to the English alphabetical series.

1st : A, B, C, D, E, F, G

2nd : Z, Y, X, W, V, U, T

=> Ans - (A)

### Question 8

**3, 8, 10, 15, 17, 22, 24, ?, ?**

**A** 26, 28

**B** 29, 31

**C** 29, 32

**D** 29, 34

**Answer:** B

### Explanation:

The numbers '5' and '2' are alternatively added.

$3 + 5 = 8$

$8 + 2 = 10$

$10 + 5 = 15$

$15 + 2 = 17$

$17 + 5 = 22$

$22 + 2 = 24$

$24 + 5 = 29$

$29 + 2 = 31$

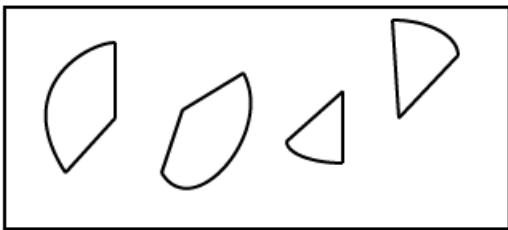
=> Ans - (B)

### Instructions

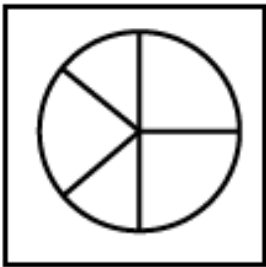
For the following questions answer them individually

### Question 9

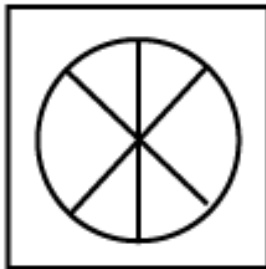
Which of the answer figures can be formed using the questions figures.



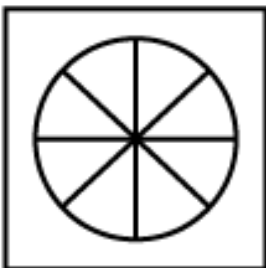
A

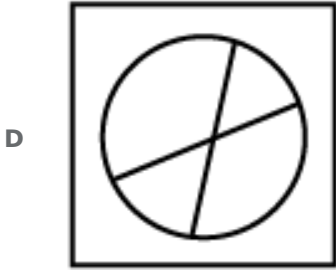


B



C





**Answer:** A

**Question 10**

In a certain code **TEMPLE** is written as **METELP**. How is **FAITHFUL** written in that code ?

- A TIAFLUFH
- B TAIFULFH
- C TAFILUFH
- D TIAFFULH

**Answer:** A

**Explanation:**

TEMPLE is written as METELP

If we break the word in half, i.e. 'TEM' and 'PLE' and reverse each of the part, we get the desired result.

Eg :- TEM -> MET and PLE -> ELP

Similarly, FAIT -> TIAF and HFUL -> LUFH

Thus, FAITHFUL : **TIAFLUFH**

=> Ans - (A)

**Instructions**

Select the related word/letter/ number from the given alternatives.

**Question 11**

**CARD: JOKER :: BOOK : ?**

- A WORDS
- B WRITER
- C PAGES
- D COVER

**Answer:** B

**Question 12**

**8 : 81 :: 64 : ?**

- A 525
- B 625

C 125

D 137

**Answer:** B

**Explanation:**

Expression =  $8 : 81 :: 64 : ?$

The pattern followed is =  $m^n : (m + 1)^{n+1}$

Eg :-  $(2)^3 : (3)^4 = 8 : 81$

Similarly,  $(4)^3 = 64$

and  $(4 + 1)^{3+1} = (5)^4 = 625$

=> Ans - (B)

**Question 13**

**AK : FP :: XD : ?**

A SJ

B CI

C BH

D TE

**Answer:** B

**Explanation:**

Expression =  $AK : FP :: XD : ?$

The pattern followed is :  $A (+6) = F$  and  $K (+6) = P$

Similarly,  $X (+6) = C$  and  $D (+6) = I$

Thus,  $XD : CI$

=> Ans - (B)

**Question 14**

**WALLET : MONEY :: ENVELOPE : ?**

A GUM

B POSTOFFICE

C SUITCASE

D LETTER

**Answer:** D

**Explanation:**

Second is kept in first, money is kept in wallet, similarly an envelope contains a **letter**.

=> Ans - (D)

**Instructions**

For the following questions answer them individually



**Question 15**

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 in two Matrices given below. 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, e.g., "T" can be represented by 03, 12 etc., and 'M' can be represented by 55, 67 etc. Similarly, you have to identify the set for the word 'RUDE'.

MATRIX-I					
	0	1	2	3	4
0	B	D	E	T	O
1	D	E	T	O	B
2	E	B	O	D	T
3	T	O	B	E	D
4	O	T	D	B	E

MATRIX-II					
	5	6	7	8	9
5	M	U	I	L	R
6	U	L	M	R	I
7	I	M	R	U	L
8	L	R	U	I	M
9	R	I	L	M	U

- A 59, 99, 34, 11
- B 77, 56, 02, 01
- C 95, 87, 42, 12
- D 56, 65, 10, 33

**Answer:** A

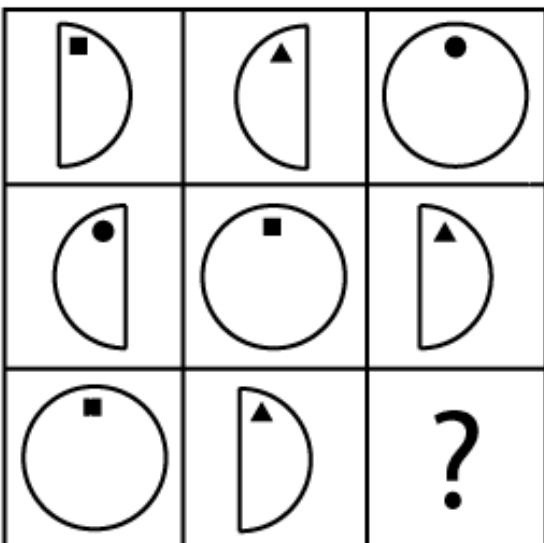
**Explanation:**

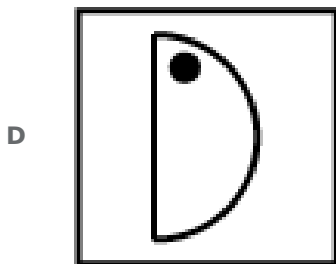
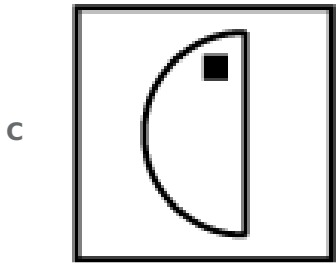
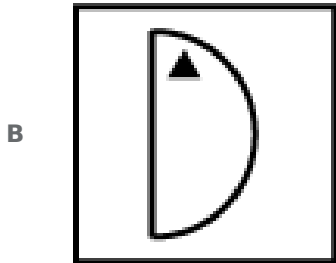
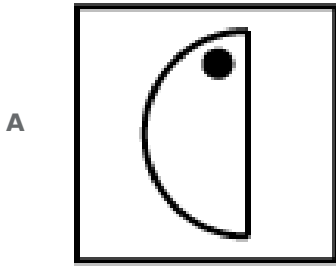
- (A) : 59, 99, 34, 11 : **RUDE**
- (B) : 77, 56, 02, 01 : RUED
- (C) : 95, 87, 42, 12 : RUdT
- (D) : 56, 65, 10, 33 : UUDE

=> Ans - (A)

**Question 16**

Which answer figure will complete the pattern in the question figure ?





**Answer:** A

**Explanation:**

In each row, (if we look at the small 2-D figures), each row contains a square, triangle and circle, thus in the last row, the missing figure will definitely contain a circle, hence the middle two options are eliminated.

Also, in each row, the two semi circles are in opposite directions, thus first is the correct option.

=> Ans - (A)

**Question 17**

**From the given alternative words, select the word which cannot be formed using the letters of the given word.**

**ADMINISTRATION**

A SITUATION

B RATION

C STRAIN

**D** TRADITION

**Answer:** A

**Explanation:**

The word ADMINISTRATION does not contain any 'U', thus the term **Situation** cannot be formed.

=> Ans - (A)

**Instructions**

Two statements are given followed by two Conclusions / Assumptions, I and II. You have to consider the statement to be true, even if it seems at variance from commonly known facts. You are to decide which of the given conclusions / assumptions can definitely be drawn from given statements. Indicate your answer.

**Question 18**

**Statements**

**1. No teacher come to the school on a bicycle.**

**b: Anand comes to the school on a bicycle.**

**Conclusions**

**I. Anand is not a teacher**

**II. Anand is a student.**

**A** Conclusion II alone can be drawn.

**B** Both conclusions cannot be drawn.

**C** Both conclusions can be drawn.

**D** Conclusion I alone can be drawn.

**Answer:** D

**Explanation:**

The given statement indicates that none of the teachers of a school uses bicycle to come to the school and Anand comes to school using a bicycle, thus this concludes that Anand is not a teacher, but we cannot know whether Anand is a student or not.

Thus, conclusion I alone can be drawn.

=> Ans - (D)

**Instructions**

For the following questions answer them individually

**Question 19**

**The number of students in an art class is increasing month after month as follows. Find the number of students in June from the following information.**

Month	No.of Students
January	1
February	2
March	4
April	7
May	11
June	?

**A** 16

B 13

C 15

D 14

**Answer:** A

**Explanation:**

Consecutive natural numbers are added.

$$1 + 1 = 2$$

$$2 + 2 = 4$$

$$4 + 3 = 7$$

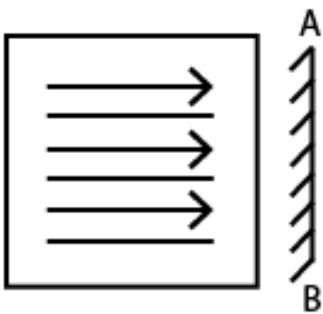
$$7 + 4 = 11$$

$$11 + 5 = \mathbf{16}$$

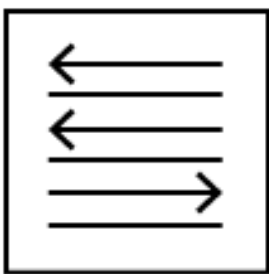
=> Ans - (A)

**Question 20**

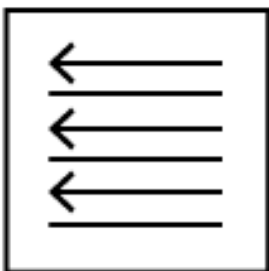
In the question, if a mirror is placed on the line AB then which of the answer figures is the right image of the given figure ?

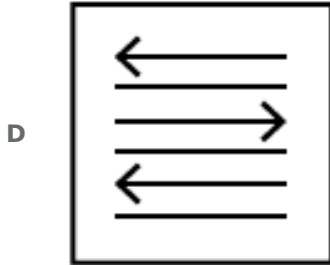
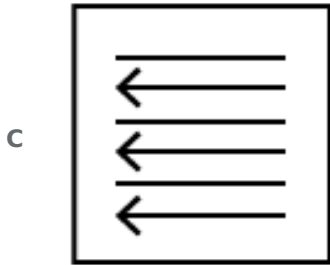


A



B





Answer: B

**Explanation:**

A vertical mirror is placed, so the object on the left will appear right in reverse position and vice-versa.

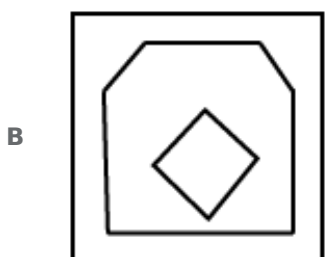
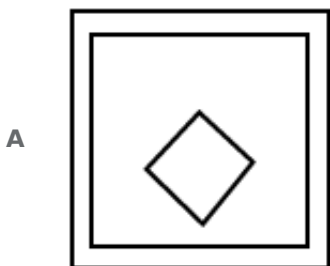
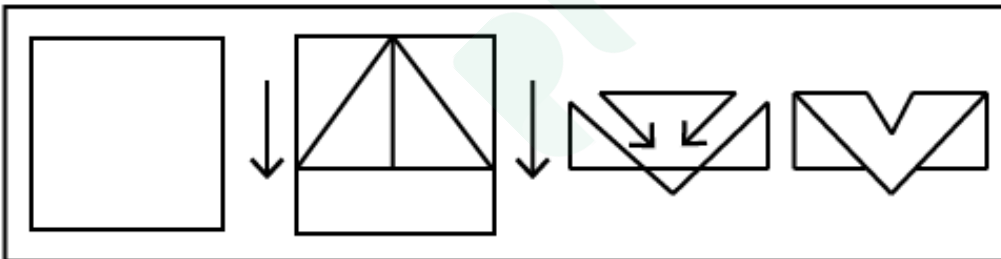
So all the arrows will point in the same direction alternatively, thus the first and last options will be eliminated.

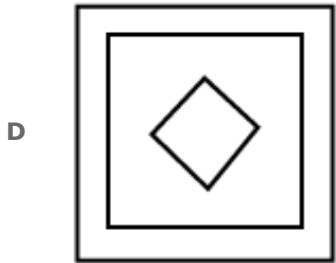
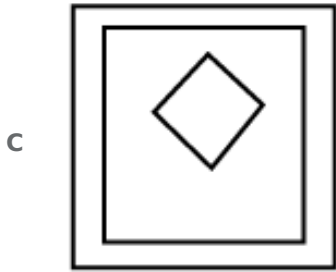
Also, in the question figure, the first arrow is at the top which will still stay at the top but will face leftwards, hence second option is the right image.

=> Ans - (B)

**Question 21**

A piece of paper is folded and cut as shown below in the question figures. From the given answer figures, indicate how it will appear when opened ?

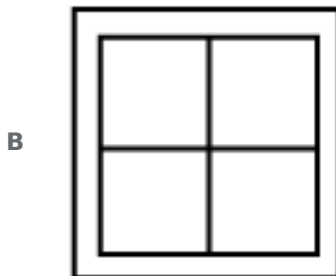
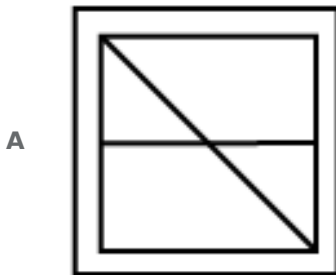
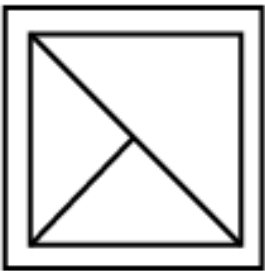


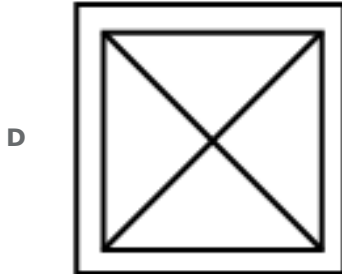
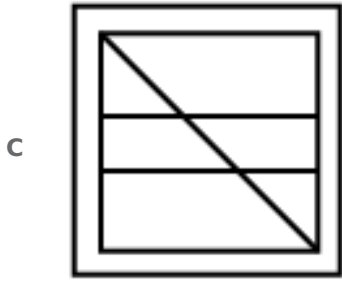


Answer: B

Question 22

From the given answer figures, select the one in which the question figure is hidden / embedded.





**Answer:** D

**Explanation:**

The above figure is represented by 'red' color and is hidden in :



=> Ans - (D)

**Question 23**

**Which will appear 3rd in the dictionary ?**

- A collision
- B collegiate
- C collinear
- D colloquy

**Answer:** A

**Explanation:**

As per the order of dictionary,

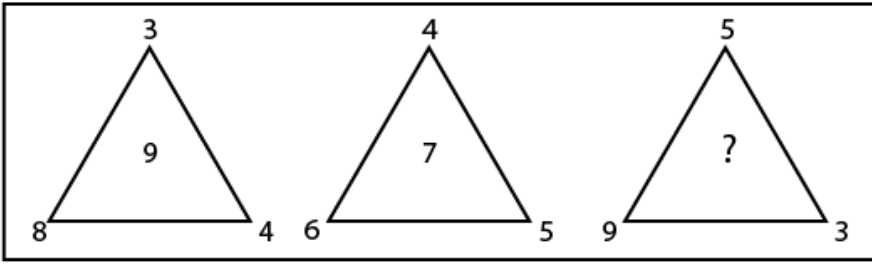
= collegiate -> collinear -> collision -> colloquy

Thus, 3rd word is **collision**

=> Ans - (A)

**Question 24**

Find the missing number from the given responses ?



- A 8
- B 9
- C 6
- D 7

**Answer:** D

**Explanation:**

The number at the top is subtracted from the sum of bottom two numbers to get the middle number.

Eg :-  $(8 + 4) - 3 = 9$

and  $(6 + 5) - 4 = 7$

Similarly,  $(9 + 3) - 5 = 7$

=> Ans - (D)

**Question 25**

If 50 minutes ago, it was 45 minutes past four O clock, how many minutes is it until six 'O clock ?

- A 45
- B 15
- C 25
- D 35

**Answer:** C

**Explanation:**

45 minutes past four O clock = 4:45

Thus, present time = 4:45 + 50 minutes = 5:35

Thus minutes until six 'o clock = 6:00 - 5:35 = **25 minutes**

=> Ans - (C)

## Quant

**Instructions**

For the following questions answer them individually



### Question 26

A 200 metre long train is running at a speed of 72 km/ hr How long will it take to cross 800 metre long bridge ?

- A 50 seconds
- B 40 seconds
- C 60 seconds
- D 30 seconds

**Answer:** A

#### **Explanation:**

Speed of train =  $(72 \times \frac{5}{18}) = 20$  m/s

Total length =  $200 + 800 = 1000$  m

Thus, time taken =  $\frac{1000}{20} = 50$  seconds

=> Ans - (A)

### Question 27

The average age of a husband and his wife was 23 years at the time of their marriage. After five years they have a one year old child. The average age of the family now is

- A 29.3 years
- B 19 years
- C 23 years
- D 28.5 years

**Answer:** B

#### **Explanation:**

Sum of ages of husband and wife at the time of their marriage =  $23 \times 2 = 46$  years

Sum of the family after 5 years = 5 years of husband + 5 years of wife + 1 year of child

=> Total age =  $46 + 5 + 5 + 1 = 57$  years

=> Required average =  $\frac{57}{3} = 19$  years

=> Ans - (B)

### Question 28

A use worth Rs.1,50,000 is sold by X to Y at 5% profit. Y sells the house back to X at 2% loss. Then in the entire transaction:

- A X gains Rs.3150
- B X loses Rs.4350
- C X loses Rs.1350
- D X gains Rs.4350

**Answer: A**

**Explanation:**

In the first transaction :

Cost price for X = Rs. 1,50,000

Profit % = 5%

$$\Rightarrow \text{Selling price for X} = \text{Cost price of Y} = 1,50,000 + \left(\frac{5}{100} \times 1,50,000\right)$$

$$= 1,50,000 + 7500 = \text{Rs. } 1,57,500$$

In the second transaction :

Cost price for Y = Rs. 1,57,500

Loss % = 2%

$$\Rightarrow \text{Selling price for Y} = \text{Cost price of X} = 1,57,500 - \left(\frac{2}{100} \times 1,57,500\right)$$

$$= 1,57,500 - 3150 = \text{Rs. } 1,54,350$$

$$\therefore \text{Total profit for X} = 1,57,500 - 1,54,350 = \text{Rs. } 3150$$

$\Rightarrow$  Ans - (A)

**Question 29**

The value of  $\frac{(75.8)^2 - (35.8)^2}{40}$  is

**A** 121.6

**B** 40

**C** 160

**D** 111.6

**Answer: D**

**Explanation:**

$$\frac{75.8^2 - 35.8^2}{40} = \frac{(75.8 + 35.8)(75.8 - 35.8)}{40}$$

$$= \frac{111.6 \times 40}{40} = 111.6$$

**Question 30**

What should be the least number of years in which the simple interest on Rs.2600 at  $6\frac{2}{3}\%$  will be an exact number of rupees ?

**A** 3

**B** 2

**C** 5

**D** 4

**Answer: A**

**Explanation:**

Let the number of years be  $t$

Simple Interest on Rs.2600 at  $6\frac{2}{3}\%$  interest is

$$\frac{2600 \times x \times (\frac{20}{3})}{100}$$
$$= \frac{520x}{3}$$

So 'x' should be 3,6,9,.... for exact number

∴ Least value of 'x' = 3

### Question 31

**A man allows a discount of 10% on a book whose marked price is Rs.40. What is the cost price so that the profit is 20% ?**

- A** Rs.35
- B** Rs.40
- C** Rs.30
- D** Rs.45

**Answer:** C

#### **Explanation:**

Marked price = Rs. 40

Discount % = 10%

$$\Rightarrow \text{Selling price} = 40 - (\frac{10}{100} \times 40)$$

$$= 40 - 4 = \text{Rs. } 36$$

Profit % = 20%

$$\Rightarrow \text{Cost price} = (\frac{36}{100+20}) \times 100$$

$$= \frac{36}{6} \times 5 = \text{Rs. } 30$$

∴ Ans - (C)

### Question 32

**The three angles of a triangle are in the ratio 3 : 4 : 5. Then the angles respectively are:**

- A**  $45^\circ, 60^\circ, 75^\circ$
- B**  $60^\circ, 45^\circ, 75^\circ$
- C**  $60^\circ, 75^\circ, 45^\circ$
- D**  $75^\circ, 60^\circ, 45^\circ$

**Answer:** A

#### **Explanation:**

Ratio between angles = 3:4:5

Total parts = 3+4+5 = 12 parts

Total angle in triangle =  $180^\circ$

$$12 \text{ parts} \rightarrow 180^\circ$$

then 1 part  $\rightarrow 15^\circ$

∴ therefore Angles in the triangle are

$$15 \times 3 = 45^\circ$$
$$15 \times 4 = 60^\circ$$
$$15 \times 5 = 75^\circ$$

### Question 33

The amount of rice produced in a square field of side 50 m is 750 kg. The amount of rice produced in a similar square field of side 100 m will be

- A 2000 kg
- B 3000 kg
- C 3500 kg
- D 1500 kg

**Answer:** B

### Explanation:

Amount of rice produced in a square field of side 50 m = 750 kg

$$\text{Area of square field} = 50 \times 50 = 2500 \text{ m}^2$$

$$\text{Area of new field} = 100 \times 100 = 10,000 \text{ m}^2$$

It is given that amount of rice produced in  $2500 \text{ m}^2 = 750 \text{ kg}$

$$\Rightarrow \text{Amount of rice produced in } 10,000 \text{ m}^2 = \frac{750}{2500} \times 10,000$$

$$= 750 \times 4 = 3000 \text{ kg}$$

$\Rightarrow$  Ans - (B)

### Question 34

The sum of all natural numbers from 75 to 97 is:

- A 1598
- B 1978
- C 1798
- D 1958

**Answer:** B

### Explanation:

$t_n = a + (n-1)d$  where

$t_n = n^{\text{th}}$  term,

a = first term

n = no. of terms

d = difference between terms

Here  $t_n = 97, a = 74, d = 1$

$$97 = 74 + (n-1)1$$

$$\Rightarrow 97 = 73 + n$$

$$\Rightarrow n = 23$$

Sum of natural numbers between 74 and 97 is

$$S_n = \frac{n}{2}[2a + (n-1)d]$$

Here  $n=23$ ,  $a=74$ ,  $d=1$

$$\begin{aligned} S_n &= \frac{23}{2} [74 + (23-1)1] \\ &= \frac{23}{2} \times 172 = 23 \times 86 = 1978 \end{aligned}$$

∴ Sum of natural numbers between 74 and 97 is 1978

### Question 35

Six friends have an average height of 167 cms. A boy with height 162 cm leaves the group. Find the new average height.

- A 168 cm
- B 166 cm
- C 169 cm
- D 167 cm

**Answer:** A

### Explanation:

Average height of 6 friends = 167 cm

⇒ Sum of height of 6 friends =  $167 \times 6 = 1002$  cm

When the boy with height 162 cm left, sum of height of remaining 5 friends =  $1002 - 162 = 840$  cm

⇒ Required average =  $\frac{840}{5} = 168$  cm

⇒ Ans - (A)

### Question 36

If  $x, y$  are rational numbers and  $\frac{5+\sqrt{11}}{3-2\sqrt{11}} = x + y\sqrt{11}$ . The values of  $x$  and  $y$  are

- A  $x = \frac{-14}{17}, y = \frac{-13}{26}$
- B  $x = \frac{4}{13}, y = \frac{11}{17}$
- C  $x = \frac{-27}{25}, y = \frac{-11}{37}$
- D  $x = \frac{-37}{35}, y = \frac{-13}{35}$

**Answer:** D

### Explanation:

$$\frac{5+\sqrt{11}}{3-2\sqrt{11}} = x + y\sqrt{11}$$

Rationalising above equation

$$\frac{5+\sqrt{11}}{3-2\sqrt{11}} \times \frac{3+2\sqrt{11}}{3+2\sqrt{11}} = x + y\sqrt{11}$$

$$\Rightarrow \frac{15+10\sqrt{11}+3\sqrt{11}+22}{9-44} = x + y\sqrt{11}$$

$$\Rightarrow \frac{37+13\sqrt{11}}{-35} = x + y\sqrt{11}$$

$$\Rightarrow \left(\frac{-37}{35}\right) + \left(\frac{-13}{35}\right)\sqrt{11} = x + y\sqrt{11}$$

Comparing above equations

$$x = \frac{-37}{35} \text{ and } y = \frac{-13}{35}$$

### Question 37

If the radius of a circle is decreased by 10% then the area of the circle is decreased by

- A 89%
- B 18%
- C 19%
- D 25%

**Answer: C**

### Explanation:

Let radius of circle =  $r = 10$  cm

$$\Rightarrow \text{Area of circle} = A = \pi r^2 = \pi(10)^2 = 100\pi \text{ cm}^2$$

After decreasing the radius by 10%,  $\Rightarrow$  New radius =  $r' = 10 - \left(\frac{10}{100} \times 10\right) = 9$  cm

$$\Rightarrow \text{New area of circle} = A' = \pi(9)^2 = 81\pi \text{ cm}^2$$

$$\therefore \text{Decrease in area} = \frac{(100-81)}{100} \times 100 = 19\%$$

$\Rightarrow$  Ans - (C)

### Question 38

Ritu purchased  $2\frac{1}{2}$  dozen eggs at the rate of Rs.20 per dozen. She found that 6 eggs were rotten. She sold the remaining eggs at the rate of Rs.22 per dozen. Then her profit or loss percent is:

- A 12% loss
- B 12% profit
- C 10% loss
- D 10% profit

**Answer: A**

### Explanation:

$$2\frac{1}{2} \text{ dozens} = \frac{5}{2} \times 12 = 30 \text{ eggs}$$

12 eggs price  $\rightarrow$  Rs.20

then 30 eggs price  $\rightarrow$  Rs. 50

No. of rotten eggs = 6

Remaining eggs = 24

Selling price of 12 eggs = Rs.22

Selling price of 24 eggs =  $2 \times 22 =$  Rs.44

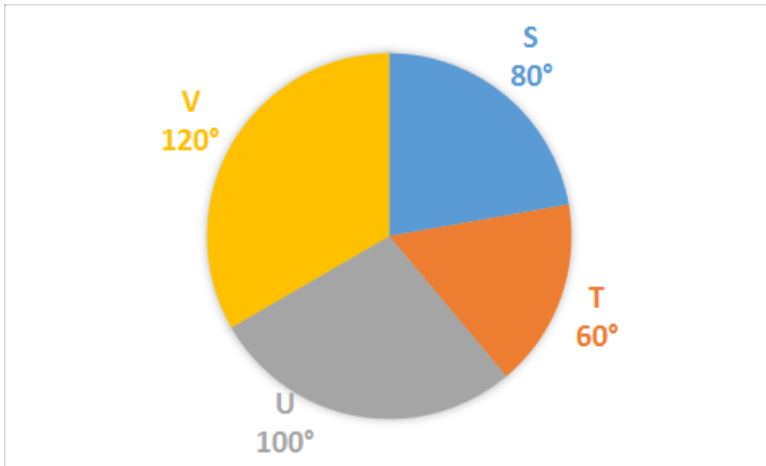
$$\text{Loss percentage} = \frac{S.P. - C.P.}{C.P.} \times 100$$

$$= \frac{50-44}{50} \times 100$$

$$= \frac{6}{50} \times 100 = 12\% \text{ loss}$$

### Instructions

The following pie-chart shows the market share of four companies S, T, U and V. Total market is worth Rs.72 crores. Study the pie-chart and answer the questions.



### Question 39

The company having maximum market share is

- A T
- B U
- C S
- D V

**Answer:** D

### Explanation:

The company having maximum market share is the company having maximum central angle = **V** ( $120^\circ$ )

=> Ans - (D)

### Question 40

The difference of market shares of companies V and U is

- A Rs.8 crores
- B Rs.9 crores
- C Rs.6 crores
- D Rs.4 crores

**Answer:** D

### Explanation:

Total market share = Rs. 72 crores

Difference of market share =  $\frac{72}{360} \times (120^\circ - 100^\circ)$

$$= \frac{20}{5} = Rs. 4 \text{ crores}$$

=> Ans - (D)

### Instructions

For the following questions answer them individually

### Question 41

The time required for a boy to travel along the external and internal boundaries of a circular path are in the ratio 20: 19. If the width of the path be 5 metres, the internal diameter is:

- A 195 metres
- B 192 metres
- C 180 metres
- D 190 metres

**Answer:** D

### Explanation:

Let internal radius of the path be  $r$  m and thus external radius =  $(r + 5)$  m

As, distance  $\propto$  time

$$\Rightarrow \frac{2\pi(r+5)}{2\pi r} = \frac{20}{19}$$

$$\Rightarrow 19r + 95 = 20r$$

$$\Rightarrow 20r - 19r = r = 95$$

$$\therefore \text{Internal diameter} = 2 \times 95 = 190 \text{ m}$$

=> Ans - (D)

### Question 42

8 children and 12 men complete a certain piece of work in 9 days, Each child takes twice the time taken by a man to finish the work. In how many days will 12 men finish the same work ?

- A 9 days
- B 13 days
- C 12 days
- D 15 days

**Answer:** C

### Explanation:

Each child takes twice the time taken by a man to finish the work, => 2 children = 1 man

Thus, 8 children = 4 men

Hence, (4+12) = 16 men complete the work in 9 days.

$$\Rightarrow 12 \text{ men will finish in} = \frac{16 \times 9}{12} = 12 \text{ days}$$

=> Ans - (C)



**Question 43**

A certain number of men can do a work in 40 days. If there we 8 men more, it could be finished in 10 days less. How many men were there initially ?

- A 20
- B 24
- C 30
- D 16

**Answer:** B

**Explanation:**

Let there be  $x$  men initially, using  $M_1D_1 = M_2D_2$ , where  $M$  is the number of men and  $D$  is the number of days.

$$\Rightarrow x \times 40 = (x + 8) \times 30$$

$$\Rightarrow 4x = 3x + 24$$

$$\Rightarrow 4x - 3x = 24$$

$\therefore$  There were **24** men initially.

$\Rightarrow$  Ans - (B)

**Question 44**

If Rs.510 be divided among A, B and C in such a way that A gets  $\frac{2}{3}$  of what B gets and B gets  $\frac{1}{4}$  of what C gets, then their shares are respectively.

- A Rs.150, Rs.240, Rs.120
- B Rs.60, Rs.90, Rs.360
- C Rs.120, Rs.240, Rs.150
- D Rs.150, Rs.300, Rs.60

**Answer:** B

**Explanation:**

Let A's share be 'A', B's share be 'B' and C's share be 'C'.

$$A = \frac{2}{3} \times B \Rightarrow A:B=2:3 \rightarrow (1)$$

$$B = \frac{1}{4} \times C \Rightarrow B:C=1:4 \rightarrow (2)$$

Multiplying equation(2) with 3

$$\Rightarrow B:C=3:12 \rightarrow (3)$$

Combining equation(1) and equation(3)

$$\Rightarrow A:B:C=2:3:12. \text{ Total parts} = 2+3+12=17 \text{ parts}$$

17 parts  $\rightarrow$  Rs.510

1 part  $\rightarrow$  Rs.30

A's share  $\rightarrow$  2 parts  $\rightarrow$  Rs.60

B's share  $\rightarrow$  3 parts  $\rightarrow$  Rs.90

C's share  $\rightarrow$  12 parts  $\rightarrow$  Rs.360

### Question 45

The average weight of 8 persons increases by 2.5 kg when a new person comes in place of one of them weighing 65 kg. The weight of the new person is

- A 84 kg
- B 85 kg
- C 76 kg
- D 76.5 kg

**Answer: B**

#### Explanation:

Let average weight of 8 persons =  $x$  kg and weight of new person =  $y$  kg

$\Rightarrow$  Sum of weights of persons =  $8x$  kg

According to ques,

$$\Rightarrow \frac{8x - 65 + y}{8} = x + 2.5$$

$$\Rightarrow 8x - 65 + y = 8x + 20$$

$$\Rightarrow y = 20 + 65 = 85$$

$\therefore$  The weight of the new person = **85 kg**

$\Rightarrow$  Ans - (B)

### Question 46

The sum of two positive numbers is 20% of the sum of their squares and 25% of the difference of their squares. If the numbers are  $x$  and  $y$  the,  $\frac{x+y}{x^2}$  is equal to

- A  $\frac{1}{4}$
- B  $\frac{3}{8}$
- C  $\frac{1}{3}$
- D  $\frac{2}{9}$

**Answer: D**

#### Explanation:

$$\text{Given } x+y = \frac{20}{100} \times (x^2 + y^2)$$

$$\Rightarrow x+y = \frac{1}{5} \times (x^2 + y^2)$$

$$\Rightarrow x^2 + y^2 = 5(x+y) \rightarrow (1)$$

$$\text{Also Given } x+y = \frac{25}{100} \times (x^2 - y^2)$$

$$\Rightarrow x+y = \frac{1}{4} \times (x^2 - y^2)$$

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

Adding equation(1) and equation(2)

$$\Rightarrow 2x^2 = 9(x+y)$$

$$\therefore \frac{x+y}{x^2} = \frac{2}{9}$$

### Question 47

A seller gains 20% profit even after allowing 10% discount. If the amount of profit on a TV set is Rs.750, then the marked price of the TV set is

- A Rs.5200
- B Rs.5000
- C Rs.4800
- D Rs.5500

**Answer:** B

#### Explanation:

Let marked price of TV set = Rs.  $100x$

Discount % = 10%

$$\Rightarrow \text{Selling price} = 100x - \left(\frac{10}{100} \times 100x\right)$$

$$= 100x - 10x = \text{Rs. } 90x$$

Profit % = 20%

$$\Rightarrow \text{Cost price} = \frac{90x}{(100+20)} \times 100$$

$$= \frac{90x}{6} \times 5 = \text{Rs. } 75x$$

$$\text{Thus, profit} = 90x - 75x = 750$$

$$\Rightarrow x = \frac{750}{15} = 50$$

$$\therefore \text{Marked price} = 100 \times 50 = \text{Rs. } 5000$$

$\Rightarrow$  Ans - (B)

### Question 48

Ram bought a bike for Rs.60,000. He paid Rs.10,000 cash down and the rest at the end of 2 years at 15% simple interest. How much more did he pay as simple interest ?

- A Rs.15,000
- B Rs.25,000
- C Rs.35,000
- D Rs.50,000

**Answer:** A

#### Explanation:

Principal sum = Rs. 60,000 – 10,000 = Rs. 50,000

Rate of interest = 15% and time period = 2 years

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

$$= \frac{50,000 \times 15 \times 2}{100}$$

$$= 500 \times 30 = \text{Rs. } 15,000$$

=> Ans - (A)

**Question 49**

A man rows 750 m in 675 seconds against the stream and returns in  $7\frac{1}{2}$  minutes. Its rowing speed in still water is (in km/hr).

- A 5.5
- B 5.75
- C 5
- D 5.25

**Answer:** D

**Explanation:**

$$\text{Boat's upstream speed}(S_u) = \frac{750}{675} = \frac{10}{9} \text{ m/sec}$$

$$\text{Boat's downstream speed}(S_d) = \frac{750}{450} = \frac{5}{3} \text{ m/sec}$$

$$\text{Boat's speed in still water} = \frac{1}{2} \times (S_u + S_d)$$

$$= \frac{1}{2} \times \left( \frac{10}{9} + \frac{5}{3} \right)$$

$$= \frac{1}{2} \times \left( \frac{25}{9} \right)$$

$$= \frac{25}{18} \text{ m/sec}$$

Converting it into km/hr

$$= \frac{25}{18} \times \frac{18}{5} = 5 \text{ km/hr}$$

**Question 50**

A scooter is sold at three successive discounts of 10%, 5% and 2%. If the marked price of the scooter is Rs.18,000, find its net selling price.

- A Rs.15028.20
- B Rs.15082.00
- C Rs.15082.20
- D Rs.15080.00

**Answer:** C

**Explanation:**

Marked price = Rs. 18,000

$$\text{Selling price after first discount of 10\%} = 18,000 - \left( \frac{10}{100} \times 18,000 \right)$$

$$= 18,000 - 1800 = \text{Rs. } 16,200$$

$$\text{Similarly, selling price after second discount of 5\%} = 16,200 - \left( \frac{5}{100} \times 16,200 \right)$$

$$= 16,200 - 810 = \text{Rs. } 15,390$$

$$\text{And selling price after third discount of 2\%} = 15,390 - \left( \frac{2}{100} \times 15,390 \right)$$

$$= 15,390 - 307.8 = \text{Rs. } 15,082.20$$

=> Ans - (C)

# English

## Instructions

In the following questions, some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error. The number of that part is the answer. If a sentence is free from error, your answer is No Error.

### Question 51

**An idea was worth nothing if it has no champion.**

- A No error
- B If it has no champion
- C An idea
- D was worth nothing

**Answer: D**

### Question 52

**The camp beside ours has been built in 1966 by John's brother.**

- A No error
- B by John;s brother
- C The camp beside ours
- D has been built in 1966.

**Answer: D**

### Question 53

**I have been waiting for you since two hours.**

- A for you
- B No error
- C I have been waiting
- D since two hours

**Answer: D**

## Instructions

In the following questions, out of the four alternatives, choose the one which can be substituted for the given words / sentences.

### Question 54

**To put two and two together**

- A Proud
- B Good friend
- C Selfish friend
- D Understand

**Answer:** D

**Question 55**

**A container for the ashes of a dead person**

- A Vessel
- B Vase
- C Jug
- D Urn

**Answer:** D

**Question 56**

**One who pretends to be what he is not**

- A Hypocrite
- B Turncoat
- C Liar
- D Actor

**Answer:** A

**Instructions**

In the following questions, a part of the sentence is printed is bold. Below are given alternatives to the bold part which may improve the sentence. Choose the correct alternatives. In case no improvement is needed your answer is No improvement.

**Question 57**

**Journalism and medicine would be two of his career options.**

- A No improvement
- B could be
- C will be
- D might be

**Answer:** D

**Question 58**

**No economist can accurately foresee whether ta will go up or down.**

- A expect
- B anticipate
- C No improvement
- D obviate

**Answer:** B

**Question 59**

**One should keep their word.**

- A One's
- B his
- C everyone's
- D No improvement

**Answer:** A

**Instructions**

In the following three questions, choose the word opposite in meaning to the given word.

**Question 60**

**NOISILY**

- A loudly
- B quietly
- C clearly
- D distinctly

**Answer:** B

**Question 61**

**ADMIRATION**

- A blame
- B contempt
- C disapprove
- D despise

**Answer:** B

**Question 62**

**BEAUTIFUL**

- A bountiful
- B unique
- C bizarre
- D ugly

**Answer:** D

**Instructions**

In the following questions, four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word as your answer.

**Question 63**

- A complacency
- B complacensy
- C cumplacency
- D complicity

**Answer:** A

**Question 64**

- A compelsory
- B compullatory
- C compulsorry
- D compulsory

**Answer:** D

**Question 65**

- A entusiasm
- B enthussiasm
- C enthusiasm
- D enthusaism

**Answer:** D

**Instructions**

In the following three questions, out of the four alternatives, choose the one which best expresses the meaning of the given word.



**Question 66**

**ENORMOUS**

- A Petty
- B Warehouse
- C Immense
- D Trivial

**Answer:** C

**Question 67**

**INEVITABLE**

- A Significant
- B Unavoidable
- C Crucial
- D Undentable

**Answer:** B

**Question 68**

**DRIZZLE**

- A Sprinkle
- B Trickle
- C Splash
- D Downpour

**Answer:** A

**Instructions**

In the following questions, sentences are given with blanks to be filled in with an appropriate word (s). Four alternatives are suggested for each question. Choose the correct alternative out of the four as your answer.

**Question 69**

**We get milk from the\_\_\_\_\_.**

- A dairy
- B daily
- C daisy
- D diary

**Answer:** A

**Question 70**

A man from our village has been nominated \_\_\_\_ the ruling party's candidate for the post.

- A to
- B as
- C in
- D for

**Answer:** B

**Question 71**

He has been staying in Delhi \_\_\_\_ a long time.

- A for
- B since
- C from
- D till

**Answer:** A

**Question 72**

Jones is a member of our \_\_\_\_\_

- A coup
- B council
- C counter
- D counsel

**Answer:** B

**Instructions**

In each of the following questions, four alternatives are given for the Idiom / Phrase printed in bold in the sentence. Choose the alternatives which best expresses the meaning of the Idiom / Phrase as your answer.

**Question 73**

**Television has become part and parcel of our lives.**

- A status symbol
- B unavoidable luxury
- C important part
- D showy part

**Answer: C**

**Question 74**

**My kith and kin congratulated me on my brilliant success.**

- A** niece and nephew
- B** father and mother
- C** relatives
- D** colleagues

**Answer: C**

**Question 75**

**His frequent journeys are telling upon his health.**

- A** threatening
- B** improving
- C** informing
- D** affecting

**Answer: D**

## General Awareness

**Instructions**

For the following questions answer them individually

**Question 76**

**A person with blood group O' can receive blood from a person with blood group\_\_\_**

- A** Only A, B
- B** O & AB
- C** Only O
- D** A, B & O

**Answer: C**

**Question 77**

**The first black president of of South Africa and anti apartheid activist Nelson Mandela passed away on ?**

- A** 2nd Dec 2013
- B** 5th Dec 2013

**C** 9th Dec 2014

**D** 6th Dec 2014

**Answer:** B

**Question 78**

**What are the extremely hot and acid local winds blowing in North-Indian plains in summers called ?**

**A** Mistral

**B** Jet Stream

**C** Loo

**D** Fin

**Answer:** C

**Question 79**

**What is that nuclear reaction called in which mass turns into energy ?**

**A** Endoergic

**B** Endothermic

**C** Exothermic

**D** Exoergic

**Answer:** D

**Question 80**

**Ramakrishna mission was established by ?**

**A** Swamy Vivekananda

**B** Eshwar Chandra Vidyasagar

**C** Dayanand Saraswathi

**D** Raja Ramohan Roy

**Answer:** A

**Question 81**

**Which of the following is called 'Continent of contrasts' ?**

**A** Africa

**B** Asia

**C** Australia

**D** Antarctica

**Answer:** A

**Question 82**

**Who is the first prime minister who submitted his/her resignation letter outside the parliament session ?**

- A** Moraji Desai
- B** Lal Bahadur Sastri
- C** Chaudhary Charan Singh
- D** Indira Gandhi

**Answer:** C

**Question 83**

**Which is the second largest continent in the world ?**

- A** North America
- B** Africa
- C** Asia
- D** Antarctica

**Answer:** B

**Question 84**

**According to the constitution the public health, sanitation, hospitals and dispensaries comes under which list ?**

- A** Union List
- B** Concurrent List
- C** Does not come under any list
- D** States List

**Answer:** D

**Question 85**

**Which of the following is not a central problem of economy ?**

- A** What to produce
- B** For whom to produce
- C** How to produce
- D** How to maximise profit

**Answer:** D

**Question 86**

**Which Mauryan Emperor went to Shravanabelagola along with Bhadrabahu ?**

- A** Dasaratha
- B** Bindusara
- C** Ashoka
- D** Chandragupta

**Answer: D**

**Question 87**

**Who presented the 'Dynamic Theory of Profit' ?**

- A** Howle
- B** Clarke
- C** Walker
- D** Knight

**Answer: B**

**Question 88**

**What are those grey clouds called which causes rain?**

- A** cumulus
- B** cirrus
- C** nimbostratus
- D** nimbus

**Answer: C**

**Question 89**

**Which of the following methods is not used to remove permanent hardness of water?**

- A** by mixing sodium carbonate
- B** by distillation
- C** by mixing caustic soda
- D** by boiling

**Answer: D**

**Question 90**

**Who is the woman boxer to win silver medal in London Olympics of 2012?**

- A** Natasha Jonas
- B** Mary Kom
- C** Katie Taylor
- D** Nicola Adams

**Answer:** D

**Question 91**

**Who was the Governor-General of India at the time of Revolt of 1857?**

- A** Lytton
- B** Minto
- C** Canning
- D** Dalhousie

**Answer:** C

**Question 92**

**The census is conducted once in how many years ?**

- A** 5 years
- B** every year
- C** 10 years
- D** 15 years

**Answer:** C

**Question 93**

**What did Louis Pasteur discover ?**

- A** Polio vaccine
- B** Insulin
- C** Anti Rabies vaccine
- D** Penicillin

**Answer:** C

**Question 94**

**Which was the movement undertaken by the Indian Government to increase milk production ?**

- A** Green Revolution
- B** White Revolution
- C** Blue Revolution
- D** Yellow Revolution

**Answer:** B

#### **Question 95**

**Which of the following countries was the first to give women voting rights ?**

- A** New Zealand
- B** India
- C** Iceland
- D** America

**Answer:** A

#### **Question 96**

**Which countries are part of the group collectively termed as the Baltic countries ?**

- A** Poland, Belarus and Lithuania
- B** Estonia, Latvia and Lithuania
- C** Denmark, Poland and Latvia
- D** Sweden, Finland and Estonia

**Answer:** B

#### **Question 97**

**Which of the following is not an aerosol ?**

- A** Smoke
- B** Mud
- C** Fog
- D** Cloud

**Answer:** B

#### **Question 98**

**The first Electronic digital computer had which of the following components ?**



- A Electronic Valve
- B Semiconductor Memory
- C Vacuum tube
- D Transistor

**Answer:** C

**Question 99**

**Amphoteric substance reacts in which of the following ways ?**

- A Base
- B Both Base & Acid
- C None of these
- D Acid

**Answer:** B

**Question 100**

**Which day is celebrated as 'National Youth Day' in India ?**

- A 12th January
- B 20th January
- C 1st January
- D 30th January

**Answer:** A



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