



**2017 SSC CGL 12 Aug Shift-1**

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## General Awareness

### Instructions

For the following questions answer them individually

### Question 1

Which of the following pair/pairs is/are INCORRECT?

- I. Golden revolution - Fruits production
- II. Blue revolution - Increasing production of fertilizers
- III. Yellow revolution - For the production of eggs

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

Answer: D

## SSC CGL Free Mock Test

### Question 2

MTNL comes under which of the following category?

- A Navratna
- B Maharatna
- C Mini Ratna
- D None option is correct

Answer: A

### Question 3

Which of the following right has been removed from fundamental rights and converted to a simple legal right?

- A Right to life and personal liberty
- B Right to property
- C Right to education
- D Right to freedom of religion

Answer: B

### Question 4

Which of the following does not come under Fundamental Duty?

- A To safeguard public property
- B To protect and improve the natural environment
- C To promote harmony

D To protect freedom of speech and expression

Answer: D

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### Question 5

Which emperor wrote the play 'Nagananda' in Sanskrit language?

A Prabhakaravardhana

B Harshavardhana

C Chandragupta II

D Bindusara

Answer: B

### Question 6

Match the following.

#### Social Reform Movement

1. Arya Samaj
2. Brahmo Samaj
3. Veda Samaj
4. Prathna Samaj

#### Founder

- a. Raja Ram Mohan Roy
- b. Dayanand Saraswati
- c. Atmaram Pandurang
- d. Keshab Chandra Sen and K. Sridharalu Naidu

A 1-b, 2-a, 3-c, 4-d

B 1-b, 2-a, 3-d, 4-c

C 1-a, 2-b, 3-d, 4-c

D 1-b, 2-d, 3-a, 4-c

Answer: B

### Question 7

The boundary between Earth's crust and mantle is \_\_\_\_\_.

A Moho discontinuity

B Lehman discontinuity

C Conrad discontinuity

D Gutenberg discontinuity

Answer: A

## SSC CGL Previous Papers (DOWNLOAD PDF)

### Question 8

Doldrums pressure belts lies in between which of the following latitudes?

- A 5o N to 5o S
- B 35o to 60o N and S
- C 25o to 35o N and S
- D 35o to 45o N and S

**Answer: A**

**Question 9**

**Which component in tobacco makes it harmful for human consumption?**

- A Morphine
- B Nicotine
- C Heroin
- D None of these

**Answer: B**

**Question 10**

**What is full form of BOD?**

- A Biological Oxygen Deficit
- B Biological Oxygen Difference
- C Biological Oxygen Demand
- D Biological Oxygen Distribution

**Answer: C**

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**Question 11**

**Alveoli is related to which system of human body?**

- A Circulatory system
- B Excretory system
- C Reproductive system
- D Respiratory system

**Answer: D**

**Question 12**

**What is the SI unit of intensity of sound?**

- A Decible
- B Newton

C Heartz

D Tesla

Answer: A

**Question 13**

**Which colour is formed when Blue and Green are mixed?**

A Cyan

B Brown

C Black

D Violet

Answer: A

## SSC CGL Tier-2 Previous Papers PDF

**Question 14**

**In computer terminology, what is the full form of FTP?**

A Final Transfer Position

B File Transfer Position

C File Transfer Packet

D File Transfer Protocol

Answer: D

**Question 15**

**What is an exothermic reaction?**

A Reaction in which heat is released.

B Reaction in which heat is absorbed.

C Reaction in which neither heat is released nor absorbed.

D None of these

Answer: A

**Question 16**

**What are the main components of Brass Alloy?**

A Copper and Zinc

B Copper and Strontium

C Copper, Zinc and Nickel

D Copper and Nickel

Answer: A

## SSC CGL Important Questions PDF

### Question 17

Which among the following is national water animal of India?

- A Crocodile
- B Turtle
- C Alligator
- D Gangetic Dolphin

Answer: D

### Question 18

Pradhan Mantri Surakshit Matritwa Abhiyan provides facility of free health check-up and required treatment on \_\_\_\_ day of every month.

- A 1st
- B 9th
- C 15th
- D 30th

Answer: B

### Question 19

What was invented by J. B. Dunlop?

- A Airplane
- B Car
- C Rubber Tyre
- D Rubber Boot

Answer: C

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### Question 20

At which of the following stadium Sachin Tendulkar scored his 100th international century?

- A Wankhede Stadium
- B Sher-e-Bangla Stadium
- C Shahid Chandu Stadium
- D Barabati Stadium

**Answer: B**

**Question 21**

**Who amongst the following is a renowned vocalist?**

- A Kaushalaya Reddy
- B Manjit Bawa
- C Raja Ravi Verma
- D Pt. Jasraj

**Answer: D**

**Question 22**

**Which actress has been awarded with 64th National film Awards 2017?**

- A Surabhi CM
- B Tapasee Pannu
- C Trisha Krishnan
- D Anushka Shetty

**Answer: A**

## General Science Notes for SSC CGL

**Question 23**

**What is the name of the autobiography of Sachin Tendulkar?**

- A Numbers Do Lie
- B Playing it my way
- C Once upon a Time
- D What is Remembered

**Answer: B**

**Question 24**

**India recently notified the Third protocol to amend Double Taxation Avoidance Agreement with which of the following countries?**

- A China
- B Vietnam
- C Singapore
- D Malaysia

**Answer: C**

Question 25

Match the following.

**Country**

1. Bangladesh
2. Myanmar
3. Maldives
4. Bhutan

**Currency**

- a. Ngultrum
- b. Rufiyaa
- c. Taka
- d. Kyat

A 1-d, 2-c, 3-a, 4-b

B 1-b, 2-d, 3-a, 4-c

C 1-c, 2-d, 3-b, 4-a

D 1-c, 2-d, 3-a, 4-b

Answer: C

## Free SSC Study Material (18,000 Solved Questions)

### Reasoning

**Instructions**

For the following questions answer them individually

**Question 26**

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

Mathematics : Formulas :: Chemistry : ?

A Reactions

B Organisms

C Theorems

D Gravity

Answer: A

**Explanation:**

Formulas are a part of Mathematics, in the same way reactions are a part of Chemistry.

=> Ans - (A)

## SSC Exam Free Videos (Youtube)

**Question 27**

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

YONEX : DUUMG :: JASPO : ?

A OGZXX

B OXXZF

C OZTYT



D OZXXG

Answer: A

**Explanation:**

Expression : YONEX : DUUMG

The pattern followed is =

Y	O	N	E	X
(+5)	(+6)	(+7)	(+8)	(+9)
D	U	U	M	G

Similarly, for JASPO =

J	A	S	P	O
(+5)	(+6)	(+7)	(+8)	(+9)
O	G	Z	X	X

=> Ans - (A)

**Question 28**

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

49 : 169 :: 66 : ?

A 126

B 132

C 144

D 162

Answer: C

**Explanation:**

Expression : 49 : 169 :: 66 : ?

The pattern followed =  $49 = (4 + 9)^2 = (13)^2 = 169$

Similarly,  $66 = (6 + 6)^2 = (12)^2 = 144$

=> Ans - (C)

**Question 29**

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

A Mobile

B Computer

C Fountain Pen

D Television

Answer: C

**Explanation:**

In the options, apart from fountain pen, all are electronic devices, hence it is the odd one out.

=> Ans - (C)

**Question 30**

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

- A BN - P
- B GI - R
- C LM - Y
- D TA - U

**Answer: B**

**Explanation:**

The pattern followed is that when the letters are represented by numbers, then sum of numbers on the left is equal to the number on the right.

(A) : BN - P

$$\text{L.H.S.} = 2 + 14 = 16 = \text{R.H.S.}$$

(B) : GI - R

$$\text{L.H.S.} = 7 + 9 = 16 \neq \text{R.H.S.} = 18$$

(C) : LM - Y

$$\text{L.H.S.} = 12 + 13 = 25 = \text{R.H.S.}$$

(D) : TA - U

$$\text{L.H.S.} = 20 + 1 = 21 = \text{R.H.S.}$$

=> Ans - (B)

**Question 31**

In the following question, select the odd number group from the given alternatives.

- A (143, 64)
- B (232, 49)
- C (719, 289)
- D (462, 169)

**Answer: D**

**Explanation:**

$$\text{(A) : } 143 = 1 + 4 + 3 = 8 ; 8^2 = 64$$

$$\text{(B) : } 232 = 2 + 3 + 2 = 7 ; 7^2 = 49$$

$$\text{(C) : } 719 = 7 + 1 + 9 = 17 ; 17^2 = 289$$

$$\text{(D) : } 462 = 4 + 6 + 2 = 12 ; 12^2 = 144 \neq 169$$

=> Ans - (D)

**Question 32**

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

1. Exacts
2. Exotic
3. Exactly
4. Exacerbate
5. Exhaust

A 43152

B 43251

C 53421

D 54312

Answer: A

**Explanation:**

As per the dictionary,

= Exacerbate -> Exactly -> Exacts -> Exhaust -> Exotic

≡ 43152

=> Ans - (A)

## Daily Free SSC Practice Set

**Question 33**

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

FK27, LQ64, RW125, ?

A CX216

B XB216

C XC216

D YB343

Answer: C

**Explanation:**

Expression : FK27, LQ64, RW125, ?

The pattern followed is that for each letter in the terms, the difference is 6 letters, and the numbers at the end are cubes of natural numbers in increasing order.

1st letter = F, L, R, X

2nd letter = K, Q, W, C

Number =  $3^3, 4^3, 5^3, 6^3 = 27, 64, 125, 216$

Thus, next term = **XC216**

=> Ans - (C)

**Question 34**

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

19, 11, 13, 16, 15, 17, 13, 19, 21, ?

A 10

B 11

C 12

D 15

Answer: A

**Explanation:**

The given series are a combination of 3 series with a gap of two numbers, which are:

I : 19, 16, 13, \_

II : 11, 15, 19

III : 13, 17, 21

The missing number is a part of the first series (difference of -3), so next number = **10**

=> Ans - (A)

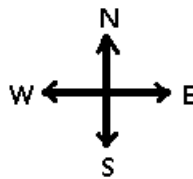
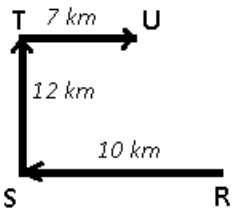
**Question 35**

**Punit starting from point R walked straight 10 km west, then turned right and walked 12 km and again turned right and walked straight 7 km. In which direction is he from point R?**

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

**Answer: B**

**Explanation:**



Punit starts from point R and reach S after walking 10 km towards west. Then he turns right and walks for 12 km and reaches T.

His final position is at U.

Thus, U is to the north-west of R.

=> Ans - (B)

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**Question 36**

**Ratio of present ages of P and Q is 9 : 4. The difference between their ages is 20 years. What will be the sum (in years) of their ages after 10 years?**

- A 62
- B 66
- C 72
- D 76

**Answer: C**

**Explanation:**

Let present ages of P and Q be  $9x$  and  $4x$  years respectively.

According to ques,  $\Rightarrow 9x - 4x = 5x = 20$

$$\Rightarrow x = \frac{20}{5} = 4$$

$\therefore$  Sum (in years) of their ages after 10 years =  $(9x + 10) + (4x + 10)$

$$= 13(4) + 20 = 52 + 20 = 72$$

$\Rightarrow$  Ans - (C)

#### Question 37

In the following question, from the given alternative words, select the word which cannot be formed using the letters of the given word.

**REASONABLE**

A EASE

B NOBLE

C SEASON

D SOLAR

**Answer: C**

**Explanation:**

The word REASONABLE does not contain 2 'S', thus the word 'Season' cannot be formed.

$\Rightarrow$  Ans - (C)

#### Question 38

In a certain code language, "PUNISHED" is written as "288" and "TAILOR" is written as "225". How is "RELEASED" written in that code language?

A 207

B 237

C 225

D 243

**Answer: A**

**Explanation:**

The numerical position of the alphabets are added and the result is multiplied by 3.

$$\text{PUNISHED} = (16 + 21 + 14 + 9 + 19 + 8 + 5 + 4) \times 3 = 96 \times 3 = 288$$

$$\text{TAILOR} = (20 + 1 + 9 + 12 + 15 + 18) \times 3 = 75 \times 3 = 225$$

$$\text{RELEASED} = (18 + 5 + 12 + 5 + 1 + 19 + 5 + 4) \times 3 = 69 \times 3 = 207$$

$\Rightarrow$  Ans - (A)

## SSC CHSL Previous Question papers (download pdf)

#### Question 39

In the following question, by using which mathematical operators will the expression become correct?

$$15 \_ 3 \_ 4 \_ 20$$

A  $\times$ ,  $\div$  and  $>$

B  $\div$ ,  $\times$  and  $<$

C  $\div$ ,  $\times$  and  $=$

D  $+$ ,  $\times$  and  $=$

**Answer: C**

**Explanation:**

Expression :  $15 \_ 3 \_ 4 \_ 20$

(A) :  $15 \times 3 \div 4 > 20$

L.H.S. =  $\frac{45}{4} = 11.25$  is not greater than R.H.S.

(B) :  $15 \div 3 \times 4 < 20$

L.H.S. =  $5 \times 4 = 20$  is not less than R.H.S.

(C) :  $15 \div 3 \times 4 = 20$

L.H.S. =  $5 \times 4 = 20 =$  R.H.S.

=> Ans - (C)

**Question 40**

If  $19 \$ 7 = 312$  and  $23 \$ 9 = 448$ , then

$31 \$ 11 = ?$

A 231

B 441

C 641

D 840

**Answer: D**

**Explanation:**

The pattern followed is that the number on the right is obtained by subtracting the squares of numbers on the left.

Eg =  $19^2 - 7^2 = 361 - 49 = 312$

and  $23^2 - 9^2 = 529 - 81 = 448$

Similarly,  $31^2 - 11^2 = 961 - 121 = 840$

=> Ans - (D)

**Question 41**

In the following question. select the number which can be placed at the sign of question mark (?) from the given alternatives.

3	2	625
5	3	4096
4	2	?

A 216

B 1024

C 1296

D 2024

Answer: C

Explanation:

The pattern followed is :

$$(3 + 2)^4 = 5^4 = 625$$

$$\text{and } (5 + 3)^4 = 8^4 = 4096$$

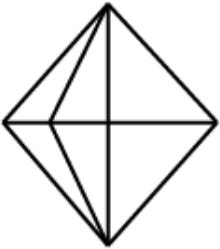
$$\text{Similarly, } (4 + 2)^4 = 6^4 = 1296$$

=> Ans - (C)

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Question 42

How many triangles are there in the given figure ?



A 12

B 13

C 15

D 18

Answer: C

Question 43

In the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:

I. All stars twinkle.

II. All satellites twinkle.

Conclusions:

I. Some stars are satellites.

II. Some stars twinkle.

A Only conclusion (I) follows.

B Only conclusion (II) follows.

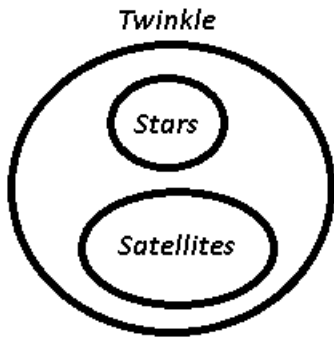
C Neither conclusion (I) nor conclusion (II) follows.

D Both conclusions follow.

Answer: B

Explanation:

The venn diagram from above statements is :



I. Some stars are satellites = false

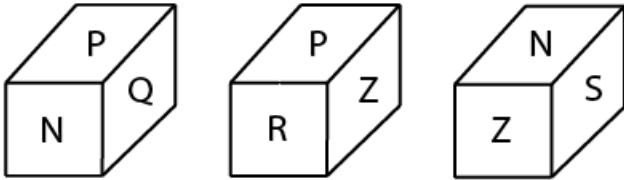
II. Some stars twinkle = true

Thus, only conclusion (II) follows.

=> Ans - (B)

#### Question 44

Three positions of a cube are shown below. What will come opposite to face containing 'N'?



A P

B Q

C S

D R

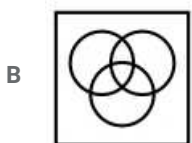
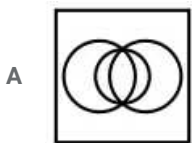
Answer: D

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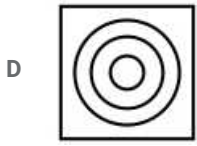
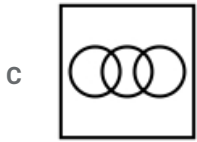
#### Question 45

Identify the diagram that best represents the relationship among the given classes.

Country, State, City







Answer: D

**Explanation:**

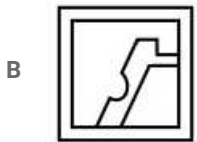
All cities are part of a state and all states are part of a country.

Thus, the last figure perfectly describes the above relationship.

=> Ans - (D)

**Question 46**

Which answer figure will complete the pattern in the question figure



Answer: A

**Explanation:**

The pattern followed is that the diagonal figures are opposite of each other, in the right diagonal the triangles are pointed inside and then outside respectively.

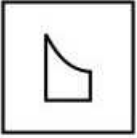
Similarly, in the missing figure, there will be a circular portion, and thus the last two options are eliminated.

Also, lower right side of the square is missing, and the second figure is not practical with the missing portion, thus it is also eliminated.

=> Ans - (A)

Question 47

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



A



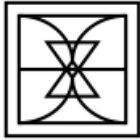
B



C



D



Answer: A

Explanation:

The question figure is embedded in the following figure in blue colour.

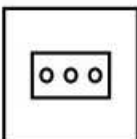
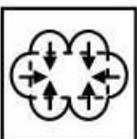


=> Ans - (A)

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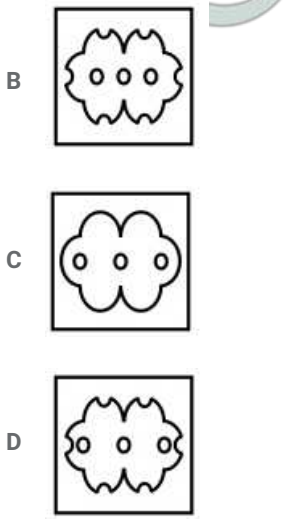
Question 48

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



A

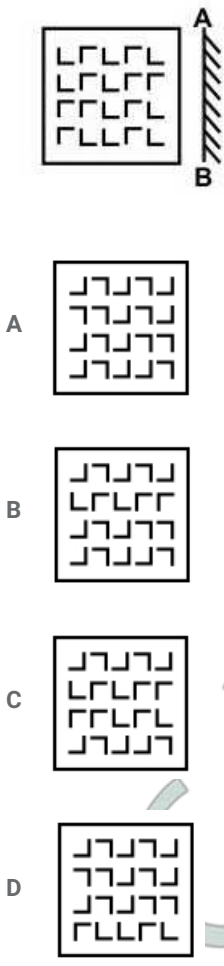




Answer: A

Question 49

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



Answer: A

Explanation:

A vertical mirror is placed, so the object on the right will appear on the left and vice-versa. Also, the position of object will be reversed, eg = 'l\_' will appear as 'l\_'

Assuming that it is a square matrix, then element at position (2,1) is not changed in the second option.

Similarly, the last two options are also eliminated.

=> Ans - (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, 'L' can be represented by 22, 43, etc., and 'K' can be represented by 75, 97, etc. Similarly, you have to identify the set for the word "PACK".

Matrix - I

	0	1	2	3	4
0	C	L	A	Z	R
1	A	Z	C	R	L
2	Z	R	L	A	C
3	L	A	R	C	Z
4	R	C	Z	L	A

Matrix - II

	5	6	7	8	9
5	S	K	T	P	V
6	T	S	V	K	P
7	K	V	P	S	T
8	P	T	S	V	K
9	V	P	K	T	S

- A 69, 02, 12, 65
- B 58, 23, 24, 76
- C 77, 31, 34, 68
- D 96, 44, 41, 97

Answer: D

Explanation:

- (A) : 69, 02, 12, 65 = PACT
  - (B) : 58, 23, 24, 76 = PACV
  - (C) : 77, 31, 34, 68 = PAZK
  - (D) : 96, 44, 41, 97 = **PACK**
- => Ans - (D)

SSC CGL Free Mock Test

Mathematics

Instructions

For the following questions answer them individually

Question 51

If 56M4 is completely divisible by 11, then what is the value of M?

- A 0
- B 1
- C 3
- D 5

Answer: D

Explanation:

For 56M4 to be completely divisible by 11

$$\Rightarrow (4 + 6) - (M + 5) = 0 \text{ or } 11$$

$$\Rightarrow 5 - M = 0$$

$$\Rightarrow M = 5$$

$\Rightarrow$  Ans - (D)

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### Question 52

A and B can together do a piece of work in 10 days. If A works with twice of his efficiency and B works with an efficiency  $\frac{1}{3}$ rd less than his efficiency, then the work gets completed in 6 days. In how many days can A and B do the work alone respectively?

A  $\frac{40}{3}, 40$

B  $\frac{20}{3}, 20$

C  $30, \frac{20}{3}$

D  $\frac{50}{3}, 25$

Answer: A

#### Explanation:

Let total work to be done = 10 units

A and B can together do a piece of work in 10 days,  $\Rightarrow$  (A+B)'s efficiency =  $\frac{10}{10} = 1$  unit/day

Let A's efficiency =  $x$  units/day and B's efficiency =  $y$  units/day

$$\Rightarrow x + y = 1 \text{ -----(i)}$$

If A works with twice of his efficiency,  $\Rightarrow$  A's new efficiency =  $2x$  units/day

Similarly, B's new efficiency =  $y - \frac{y}{3} = \frac{2y}{3}$  units/day

Now, the work is completed in 6 days,  $\Rightarrow (2x + \frac{2y}{3}) \times 6 = 10$

$$\Rightarrow 6x + 2y = \frac{10}{2} = 5 \text{ -----(ii)}$$

Solving equations (i) and (ii),  $\Rightarrow x = \frac{3}{4}$  and  $y = \frac{1}{4}$

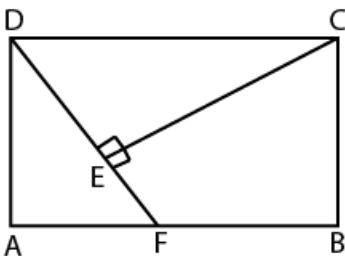
$\therefore$  Time taken by A alone to complete the work =  $\frac{10}{\frac{3}{4}} = \frac{40}{3}$  days

and time taken by B =  $\frac{10}{\frac{1}{4}} = 40$  days

$\Rightarrow$  Ans - (A)

### Question 53

In the given figure. ABCD is a rectangle. F is a point on AB and CE is drawn perpendicular to DF. If CE = 60 cm and DF = 40 cm. then what is the area ( $\text{in cm}^2$ ) of the rectangle ABCD?



A 1200

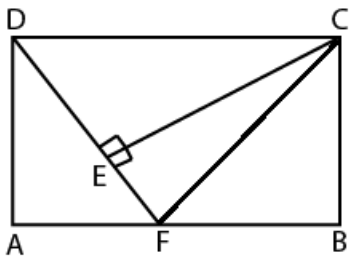
B 1800

C 2400

D 2800

Answer: C

Explanation:



CE = 60 cm and DF = 40 cm

Let area of rectangle ABCD =  $(AB) \times (AD) = x \text{ cm}^2$  -----(i)

Area of rectangle ABCD = ar( $\triangle CDF$ ) + ar( $\triangle ADF$ ) + ar( $\triangle BCF$ )

$$\Rightarrow x = \left(\frac{1}{2} \times 60 \times 40\right) + \left(\frac{1}{2} \times AD \times AF\right) + \left(\frac{1}{2} \times BF \times BC\right)$$

$$\Rightarrow x = \left(\frac{1}{2} \times 60 \times 40\right) + \left(\frac{1}{2} \times AD \times AF\right) + \left(\frac{1}{2} \times BF \times AD\right) \quad [AD = BC \text{ in rectangle ABCD}]$$

$$\Rightarrow x = 1200 + \frac{1}{2} \times AD(AF + BF)$$

$$\Rightarrow x = 1200 + \frac{1}{2} \times AD \times AB$$

$$\Rightarrow x = 1200 + \frac{x}{2} \quad [\text{Using equation (i)}]$$

$$\Rightarrow x - \frac{x}{2} = 1200$$

$$\Rightarrow x = 1200 \times 2 = 2400 \text{ cm}^2$$

=> Ans - (C)

#### Question 54

What will be the net discount (in %) of two successive discounts of 15% and 35%?

A 44.75

B 51.25

C 55.25

D 56.25

Answer: A

Explanation:

Let list price = Rs.  $100x$

$$\text{After first discount of 15\%, price} = 100x \times \frac{(100-15)}{100} = 85x$$

$$\text{After second discount of 35\%, price} = 85x \times \frac{(100-35)}{100} = 55.25x$$

$$\Rightarrow \text{Equivalent discount} = \frac{100x - 55.25x}{100x} \times 100$$

$$= 44.75\%$$

=> Ans - (A)

**Question 55**

A company, at the time of inflation reduced the staff in the ratio 5 : 3 and average salary per employee is increased in the ratio 7 : 8. By doing so, the company saved Rs 55000. What was the initial expenditure (in Rs) of company?

- A 155000
- B 160000
- C 175000
- D 215000

**Answer: C**

**Explanation:**

Let original number of employees =  $5x$

=> Number of employees after inflation =  $3x$

Let initial average salary =  $7y$  and after inflation =  $8y$

=> Original cost =  $(5x) \times (7y) = 35xy$

Similarly, new cost =  $(3x) \times (8y) = 24xy$

According to ques, money saved =  $35xy - 24xy = 55000$

=>  $xy = \frac{55000}{11} = 5000$

∴ Initial expenditure (in Rs) of company =  $35 \times 5000 = 175000$

=> Ans - (C)

**Question 56**

a, b and c are 3 values, such that  $a + b = 5$ ,  $b + c = 7.5$  and  $c + a = 8.5$ . What will be the average of these values?

- A 1.5
- B 3
- C 3.5
- D 4.5

**Answer: C**

**Explanation:**

Given :  $a + b = 5$  -----(i)

$b + c = 7.5$  -----(ii)

$c + a = 8.5$  -----(iii)

Adding equations (i),(ii) and (iii), we get :

=>  $2a + 2b + 2c = 5 + 7.5 + 8.5$

=>  $2(a + b + c) = 21$

=>  $a + b + c = \frac{21}{2}$

∴ Average of these values =  $\frac{(a+b+c)}{3}$

=  $\frac{21}{2} \times \frac{1}{3} = \frac{7}{2} = 3.5$

=> Ans - (C)

**Question 57**

Due to increase of 33.33% in the price of apples, a customer can purchase 4 apples less for Rs 16. What is the original price (in paise) of an apple?

- A 100
- B 125
- C 150
- D  $400/3$

**Answer:** A

**Explanation:**

Let the original price of an apple =  $3x$  paise

1 Rs. = 100 paise

16 Rs. = 1600 paise

=> Number of apples he can purchase with this price =  $\frac{1600}{3x}$

New price of apple after 33.33% increase =  $3x + \frac{1}{3} \times 3x = 4x$  paise

=> Number of apples he can purchase with the increased price =  $\frac{1600}{4x}$

Due to the increase in the price, 4 less apples can be purchased.

$$\Rightarrow \frac{1600}{3x} - \frac{1600}{4x} = 4$$

$$\Rightarrow \frac{1600}{x} \left( \frac{1}{3} - \frac{1}{4} \right) = 4$$

$$\Rightarrow 400 \left( \frac{4-3}{12} \right) = x$$

$$\Rightarrow x = \frac{400}{12} = \frac{100}{3}$$

∴ Original price (in paise) of an apple =  $3 \times \frac{100}{3} = 100$  paise

=> Ans - (A)

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**Question 58**

Due to increase of k% in the side, the area of a square increases by 69%. What is the value of k?

- A 30
- B 33
- C 34.5
- D 35

**Answer:** A

**Explanation:**

Let side of square = 10 cm

=> Area of square =  $(10)^2 = 100 \text{ cm}^2$

Area is increased by 69%, => New area =  $100 + \left( \frac{69}{100} \times 100 \right) = 169 \text{ cm}^2$

Thus, new side of square =  $\sqrt{169} = 13 \text{ cm}$



$$\therefore \text{Increase in side} = k = \frac{(13-10)}{10} \times 100$$

$$= 30\%$$

=> Ans - (A)

#### Question 59

A starts from a point at a speed of 30 metre/second. After 3 seconds, B starts chasing A from the same point with a speed of 50 metre/second. What will be the total distance (in metres) travelled by A and B before A is caught by B?

- A 360
- B 450
- C 600
- D 720

Answer: B

#### Explanation:

Speed of A = 30 m/s and speed of B = 50 m/s

Distance covered by A in 3 seconds =  $3 \times 30 = 90$  m

Since, they are moving in same direction, thus relative speed =  $50 - 30 = 20$  m/s

Time taken by B to overtake A =  $\frac{90}{20} = 4.5$  s

Thus, A travelled for 7.5 seconds and B for 4.5 seconds.

$\therefore$  Total distance (in metres) travelled by A and B before A is caught by B =  $(30 \times 7.5) + (50 \times 4.5)$

$$= 225 + 225 = 450 \text{ m}$$

=> Ans - (B)

#### Question 60

The difference between compound interest and simple interest on a sum for 2 year at 20% per annum is Rs 200. If the interest is compounded half yearly, then what is the difference (in Rs) between compound and simple interest for 1st year?

- A 50
- B 75
- C 100
- D 150

Answer: A

#### Explanation:

Let the given sum = Rs.  $100x$

Rate of interest = 20% and time period = 2 years

$$\text{Compound interest} = P \left[ \left( 1 + \frac{R}{100} \right)^T - 1 \right]$$

$$= 100x \left[ \left( 1 + \frac{20}{100} \right)^2 - 1 \right]$$

$$= 100x \left[ \left( \frac{6}{5} \right)^2 - 1 \right] = 100x \left( \frac{36-25}{25} \right)$$

$$= 100x \times \frac{11}{25} = 44x$$

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

$$= \frac{100x \times 20 \times 2}{100} = 40x$$

=> Difference between simple and compound interests =  $44x - 40x = 200$

$$\Rightarrow x = \frac{200}{4} = 50 \text{ -----(i)}$$

If interest is compounded half yearly, => Compound interest for 1st year =  $P[(1 + \frac{R}{200})^{2T} - 1]$

$$= 100x[(1 + \frac{20}{200})^2 - 1] = 100x[(\frac{11}{10})^2 - 1]$$

$$= 100x(\frac{121-100}{100}) = 21x$$

Similarly, Simple interest for 1st year =  $\frac{100x \times 20 \times 1}{100} = 20x$

∴ Required difference =  $21x - 20x = x = Rs. 50$

=> Ans - (A)

## SSC CGL Tier-2 Previous Papers PDF

### Question 61

If  $x(2x + 3) = 90$  and  $7y^{-2} + 2y^{-1} = y^2$  (x and y are positive numbers), then what is the value of  $x^2 + y^2$  ?

A 45

B 109

C 117

D 126

Answer: C

### Explanation:

Given :  $x(2x + 3) = 90$

$$\Rightarrow 2x^2 + 3x - 90 = 0$$

$$\Rightarrow 2x^2 - 12x + 15x - 90 = 0$$

$$\Rightarrow 2x(x - 6) + 15(x - 6) = 0$$

$$\Rightarrow (x - 6)(2x + 15) = 0$$

$$\Rightarrow x = 6, \frac{-15}{2}$$

∴ x is positive, =>  $x = 6$  -----(i)

$$\text{Also, } 7y^{-2} + 2y^{-1} = y^2$$

$$\Rightarrow \frac{7}{\sqrt{y}} + \frac{2}{\sqrt{y}} = \sqrt{y}$$

$$\Rightarrow \frac{9}{\sqrt{y}} = \sqrt{y}$$

$$\Rightarrow y = 9 \text{ -----(ii)}$$

$$\therefore x^2 + y^2$$

$$= (6)^2 + (9)^2 = 36 + 81 = 117$$

=> Ans - (C)

### Question 62

If  $\frac{x}{y} = \frac{4}{9}$ , then what is the value of  $\frac{(7x^2 - 19xy + 11y^2)}{y^2}$  ?

A  $\frac{59}{81}$

B  $\frac{100}{27}$

C  $\frac{319}{81}$

D  $\frac{913}{81}$

Answer: C

Explanation:

Given :  $y = \frac{x}{9}$

Let  $x = 4$  and  $y = 9$

To find :  $\frac{(7x^2 - 19xy + 11y^2)}{y^2}$

$= \frac{7(4)^2 - 19(4)(9) + 11(9)^2}{(9)^2}$

$= \frac{112 - 684 + 891}{81}$

$= \frac{319}{81}$

=> Ans - (C)

Question 63

If  $x - 3 + [(x-3)^{-1}] = 4$ , what is the value of  $(x - 3)^3 + [(x-3)^{-3}]$  ?

A 14

B 18

C 52

D 76

Answer: C

Explanation:

Given :  $x - 3 + [(x-3)^{-1}] = 4$  -----(i)

Cubing both sides, we get :

=>  $(x - 3 + [(x-3)^{-1}])^3 = (4)^3$

=>  $(x - 3)^3 + (x-3)^{-3} + 3(x - 3)(x-3)^{-1}[(x - 3) + (x-3)^{-1}] = 64$

=>  $(x - 3)^3 + (x-3)^{-3} + 3(4) = 64$  [Using equation (i)]

=>  $(x - 3)^3 + [(x-3)^{-3}] = 64 - 12 = 52$

=> Ans - (C)

## SSC CGL Important Questions PDF

Question 64

If  $x^2 + y^2 + z^2 = xy + yz + zx$ , then what is the value of  $\frac{(7x+3y-5z)}{5x}$  ?

A 0

B 1

C 5

D  $33/5$

Answer: B

Question 65

The length of diagonal BD of a parallelogram ABCD is 36 cm. P and Q are the centroids of triangle ABC and triangle ADC respectively. What is the length (in cm) of PQ?

A 6

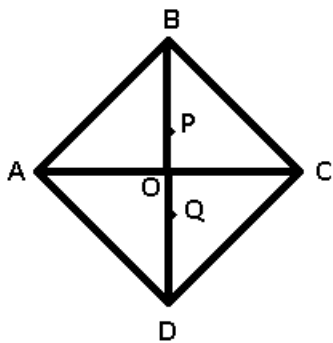
B 9

C 12

D 18

Answer: C

Explanation:



Given : ABCD is a parallelogram and  $BD = 36$  cm

To find :  $PQ = ?$

Solution : The diagonals of a parallelogram bisect each other

$$\Rightarrow BO = OD = \frac{36}{2} = 18 \text{ cm}$$

Also, a centroid intersects the median in the ratio 2 : 1

$$\Rightarrow BP : PQ = 2 : 1$$

$$\Rightarrow OP = \frac{1}{1+2} \times 18 = \frac{18}{3} = 6 \text{ cm}$$

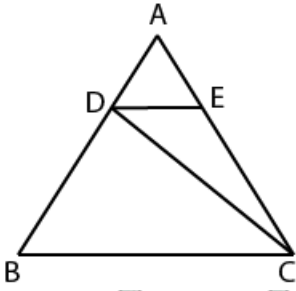
Similarly,  $OQ = 6$  cm

$$\therefore PQ = OP + OQ = 6 + 6 = 12 \text{ cm}$$

$\Rightarrow$  Ans - (C)

Question 66

In the given figure,  $DE \parallel BC$  and  $DE = \frac{1}{3} BC$ . If area of triangle  $ADE = 20\text{cm}^2$ , then what is the area ( $\text{in cm}^2$ ) of triangle DEC?



- A 40
- B 60
- C 80
- D 120

Answer: A

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Question 67

If an equilateral triangle has side 12 cm, then what is the difference (in cm) between the circumradius and inradius?

- A  $2\sqrt{2}$
- B  $3\sqrt{2}$
- C  $2\sqrt{3}$
- D  $3\sqrt{3}$

Answer: C

Explanation:

Side of equilateral triangle =  $a = 12$  cm

$\Rightarrow$  Circumradius of equilateral triangle =  $R = \frac{a}{\sqrt{3}}$  cm and inradius =  $r = \frac{a}{2\sqrt{3}}$  cm

$\therefore$  Difference (in cm) between the circumradius and inradius

$$= \frac{a}{\sqrt{3}} - \frac{a}{2\sqrt{3}} = \frac{a}{2\sqrt{3}}$$

$$= \frac{12}{2\sqrt{3}} = \frac{6}{\sqrt{3}}$$

$$= 2\sqrt{3} \text{ cm}$$

$\Rightarrow$  Ans - (C)

Question 68

If sum of the areas of the circumcircle and the incircle of an equilateral triangle is  $770\text{cm}^2$ , then what is the area ( $\text{in cm}^2$ ) of the triangle?

- A  $125\sqrt{3}$

B  $147\sqrt{3}$

C  $156\sqrt{3}$

D  $169\sqrt{3}$

Answer: B

Explanation:

Let the side of equilateral triangle =  $a$  cm

$\Rightarrow$  Circumradius of equilateral triangle =  $R = \frac{a}{\sqrt{3}}$  cm and inradius =  $r = \frac{a}{2\sqrt{3}}$  cm

Thus, sum of areas of circumcircle and incircle =  $(\pi R^2) + (\pi r^2) = 770$

$$\Rightarrow \frac{22}{7} \left[ \left( \frac{a}{\sqrt{3}} \right)^2 + \left( \frac{a}{2\sqrt{3}} \right)^2 \right] = 770$$

$$\Rightarrow \frac{a^2}{3} + \frac{a^2}{12} = 770 \times \frac{7}{22}$$

$$\Rightarrow \frac{5a^2}{12} = 245$$

$$\Rightarrow a^2 = 245 \times \frac{12}{5} = 588$$

$\therefore$  Area of equilateral triangle =  $\frac{\sqrt{3}}{4} a^2$

$$= \frac{\sqrt{3}}{4} \times 588 = 147\sqrt{3} \text{ cm}^2$$

$\Rightarrow$  Ans - (B)

Question 69

What is the value of  $\sin\left(\frac{-\pi}{3}\right) + \cos\left(\frac{-\pi}{6}\right)$ ?

A 0

B 1

C 2

D 3

Answer: A

Explanation:

Expression :  $\sin\left(\frac{-\pi}{3}\right) + \cos\left(\frac{-\pi}{6}\right)$

$\because \sin(-\theta) = -\sin\theta$  and  $\cos(-\theta) = \cos\theta$

$$= -\sin\left(\frac{\pi}{3}\right) + \cos\left(\frac{\pi}{6}\right)$$

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

$$= 0$$

$\Rightarrow$  Ans - (A)

## General Science Notes for SSC CGL

Question 70

If  $\theta$  is acute angle and  $\tan\theta - \cot\theta = 0$ , then what is the value of  $\tan^{26}\theta + \cot^{100}\theta$ ?

A -2

B 0

C 1

D 2

Answer: D

Explanation:

Given :  $\tan\theta - \cot\theta = 0$

$$\Rightarrow \tan\theta = \cot\theta$$

$$\Rightarrow \tan\theta = \frac{1}{\tan\theta}$$

$$\Rightarrow \tan^2\theta = 1$$

$$\Rightarrow \tan\theta = \sqrt{1} = 1$$

$$\Rightarrow \theta = \tan^{-1}(1) = 45^\circ$$

To find :  $\tan^{26}\theta + \cot^{100}\theta$

$$= \tan^{26}(45^\circ) + \cot^{100}(45^\circ)$$

$$= 1 + 1 = 2$$

$\Rightarrow$  Ans - (D)

Question 71

If  $\sin^3\theta - \sec^2\theta = 1$ , then what is the value of  $[3\tan^2(\frac{5\theta}{2}) - 1]$  ?

A 0

B 1

C 2

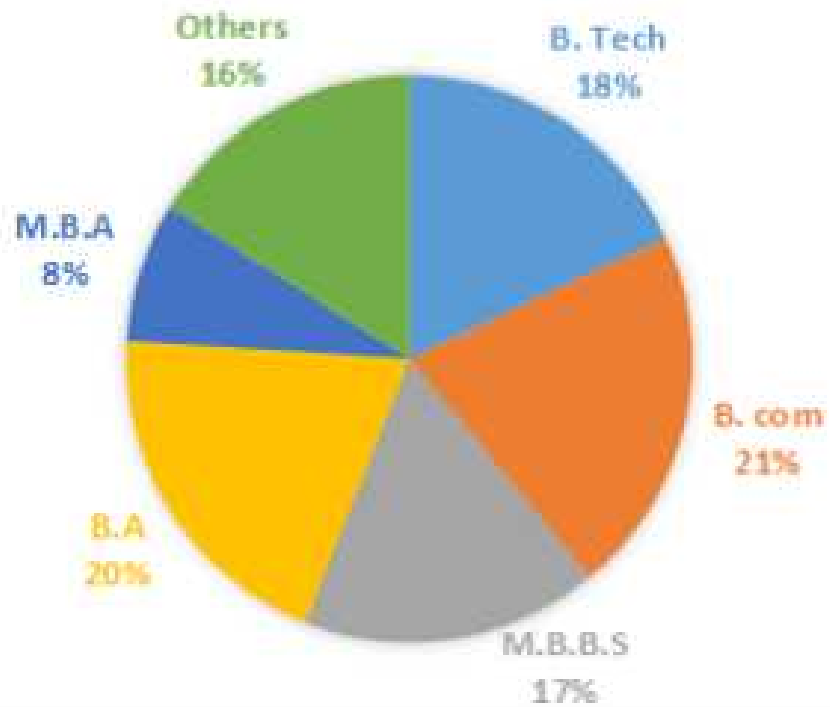
D 3

Answer: C

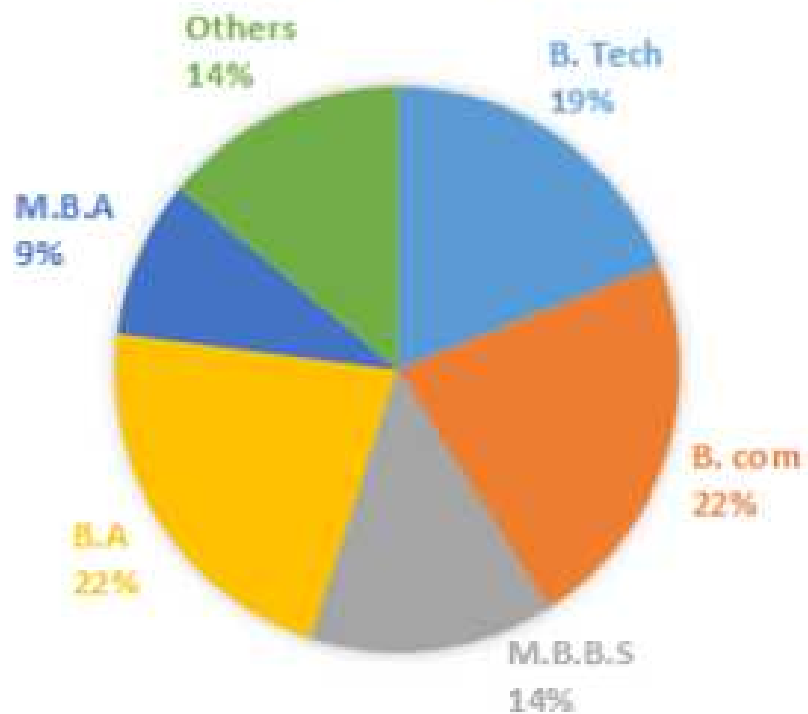
Instructions

The Pie chart 1 given below shows the segregation of 40000000 candidates who have filled the form of an examination. Pie chart 2 shows the segregation 35000000 candidates who were present in the examination. The segregation in both pie charts has been done on the basis of their highest qualification.

### PIE CHART 1



### PIE CHART 2



Question 72

If 18% of M.B.B.S. who have filled the form are from XYZ University, then how many M.B.B.S. candidates from XYZ University have filled the form?

A 1512000



- B 1224000
- C 1440000
- D None of these

Answer: B

Explanation:

Candidates who have filled the form in M.B.B.S. =  $(\frac{17}{100} \times 40,000,000) = 6,800,000$

=> Number of candidates from XYZ university =  $\frac{18}{100} \times 6,800,000$

= 1,224,000

=> Ans - (B)

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Question 73

What is the absolute difference in the B.Tech.'s who have filled the form and M.B.A.'s who were present in the examination?

- A 3500000
- B 3000000
- C 4050000
- D 4000000

Answer: C

Explanation:

Candidates who applied in B.tech =  $\frac{18}{100} \times 40,000,000 = 7,200,000$

Candidates who appeared in M.B.A. =  $\frac{9}{100} \times 35,000,000 = 3,150,000$

=> Required difference =  $7,200,000 - 3,150,000 = 4,050,000$

=> Ans - (C)

Question 74

50% of others who have filled the form are B. Arch. and 45% of others who were present in the exam are B. Arch. How many B. Arch. candidates did not give the exam?

- A 995000
- B 685000
- C 430000
- D 756000

Answer: A

Explanation:

Candidates who have applied in others =  $(\frac{16}{100} \times 40,000,000) = 6,400,000$

=> Candidates who have applied for B.Arch =  $\frac{50}{100} \times 6,400,000 = 3,200,000$

Candidates who have appeared in others =  $(\frac{14}{100} \times 35,000,000) = 4,900,000$

=> Candidates who have appeared in B.Arch =  $\frac{45}{100} \times 4,900,000 = 2,205,000$

∴ B. Arch candidates who did not gave the exam =  $3,200,000 - 2,205,000 = 995,000$

=> Ans - (A)

#### Question 75

Which highest qualification accounted for most number of absentees?

- A B.A.
- B Others
- C B.com.
- D None of these

Answer: D

#### Explanation:

Candidates who applied in B.A. =  $\frac{20}{100} \times 40,000,000 = 8,000,000$

Candidates who appeared in B.A. =  $\frac{22}{100} \times 35,000,000 = 7,700,000$

=> Absentees in B.A. =  $8,000,000 - 7,700,000 = 300,000$

Similarly, absentees in others =  $(\frac{16}{100} \times 40,000,000) - (\frac{14}{100} \times 35,000,000)$

=  $6,400,000 - 4,900,000 = 1,500,000$

Absentees in B.com =  $(\frac{21}{100} \times 40,000,000) - (\frac{22}{100} \times 35,000,000)$

=  $8,400,000 - 7,700,000 = 700,000$

Absentees in M.B.B.S. =  $(\frac{17}{100} \times 40,000,000) - (\frac{14}{100} \times 35,000,000)$

=  $6,800,000 - 4,900,000 = 1,900,000$  [MAX]

=> Ans - (D)

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### English

#### Instructions

For the following questions answer them individually

#### Question 76

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'.

If it would (a)/ rain, they will (b)/not come. (c)/ No Error (d)

- A If it would
- B rain, they will
- C not come
- D No Error

Answer: A

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**Question 77**

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'.

Organic pulses are so popular today (a)/ that many people wonder (b)/ how they ever lived without them. (c)/ No Error (d)

- A Organic pulses are so popular today
- B that many people wonder
- C how they ever lived without them
- D No Error

Answer: C

**Question 78**

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.

My father did not approve \_\_\_\_\_ the plan of travelling to Uttarakhand because of bad weather there.

- A of
- B one
- C to
- D with

Answer: A

**Question 79**

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.

I settled \_\_\_\_\_ Canada last year.

- A at
- B in
- C off
- D on

Answer: B

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**Question 80**

In the following question, out of the four alternatives, select the word similar in meaning to the word given.

**Abeyance**

- A Commencement
- B Perjure
- C Condone

D Suspension

Answer: D

**Question 81**

In the following question, out of the four alternatives, select the word similar in meaning to the word given.

**Dauntless**

A Brave

B Insane

C Playful

D Ugly

Answer: A

**Question 82**

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

**Clandestine**

A Abrupt

B Illicit

C Open

D Wary

Answer: C

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**Question 83**

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

**Intrepid**

A Greed

B Kind

C Meek

D Sigh

Answer: C

**Question 84**

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

**To steal a march**

A To act in a foolish way

B To break something

- C To outshine
- D To see a hidden meaning

Answer: C

**Question 85**

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

**In a jiffy**

- A Fail to win appreciation
- B In an appropriate manner
- C Something that is done very quickly
- D To fall in love

Answer: C

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**Question 86**

Improve the bracketed part of the sentence.

(After he arrived) from office, he goes to gym.

- A After he had being arriving
- B After he had arrived
- C After he arrives
- D No improvement

Answer: C

**Question 87**

Improve the bracketed part of the sentence.

When I first saw Ankit, he (was playing) cricket.

- A had played
- B had been playing
- C played
- D No improvement

Answer: D

**Question 88**

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

**Mania for travel**

- A Dromomania

- B Hypomania
- C Megalomania
- D Nymphomania

**Answer:** A

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### Question 89

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

One who has suddenly gained new wealth, power or prestige

- A Egotist
- B Imposter
- C Parvenu
- D Scullery

**Answer:** C

### Question 90

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

- A Acquiescence
- B Alienate
- C Belligerent
- D Sabbotage

**Answer:** D

### Question 91

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

- A Alluminium
- B Cemetery
- C Recommend
- D Satellite

**Answer:** A

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**Question 92**

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.

**P:** It isn't bragging about how great you are.

**Q:** It's not about thinking you're perfect because nobody is but knowing that you're worthy of being love and accepted.

**R:** Self esteem is how much you value yourself and how important you think you are.

**S:** It's how you see yourself and feel about your achievements.

**A** SQRP

**B** RQSP

**C** RSPQ

**D** SRQP

**Answer: C**

**Question 93**

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.

**P:** Most of them are combinations of hydrogen and carbon in varying proportions.

**Q:** Crude mineral oil comes out of the earth as a thick brown or black liquid with a strong smell.

**R:** It is a complex mixture of many different substances, each with it's own individual qualities.

**S:** Such hydrocarbons are also found in other forms such as bitumen, asphalt and natural gas.

**A** QPRS

**B** PQRS

**C** PQSR

**D** QRPS

**Answer: D**

**Question 94**

In the following question, a sentence has been given in Active/Passive voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active voice.

**He shall have bought a car.**

**A** A car was being bought by him.

**B** A car was bought by him.

**C** A car will have been bought by him.

**D** A car would have been bought by him.

**Answer: C**

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**Question 95**

In the following question, a sentence has been given in Direct/Indirect speech. Out of the four alternatives suggested, select the one which best expresses the same sentence in Indirect/Direct speech.

The teacher said to the student, "Have you brought your lunch?"

- A The student was asked by the teacher about bringing his lunch.
- B The teacher asked the student if he would be bringing his lunch.
- C The teacher asked the student if he had brought his lunch.
- D The teacher asked the student if he has brought his lunch.

**Answer:** C

**Instructions**

In the following questions, 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.

Children need to be taught the importance of hygiene early on so that it becomes a \_\_ (1) \_\_. Children are the most \_\_ (2) \_\_ to hygiene-related disorders like skin issues, rashes, infections, wounds, etc. Teach them early on about what to \_\_ (3) \_\_. Teach them that taking a few \_\_ (4) \_\_ measures to prevent infections and diseases is \_\_ (5) \_\_.

**Question 96**

(1)

- A kind
- B habit
- C regular
- D need

**Answer:** B

**Question 97**

(2)

- A innocent
- B responsible
- C pliable
- D susceptible

**Answer:** D

**Question 98**

(3)

- A avoid
- B read

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C right

D learn

Answer: A

Question 99

(4)

A scientific

B precautionary

C unimportant

D insignificant

Answer: B

Question 100

(5)

A optional

B secondary

C voluntary

D imperative

Answer: D

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