



## 2016 SSC CGL 28 Aug Morning Shift

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# Reasoning

## Instructions

For the following questions answer them individually

### Question 1

Select the related word/letters/numbers from the given alternatives:

Electric Current : Ampere :: Weight : ?

- A Scale
- B Kilogram
- C Commodity
- D Measurement

Answer: B

### Explanation:

The SI unit of Electric Current is Ampere, similarly kilogram is the unit of Weight.

=> Ans - (B)

## SSC CGL Free Mock Test

### Question 2

Select the related word/letters/numbers from the given alternatives:

ACXZ : BDWY :: CEVX : ?

- A DFUZ
- B DFUW
- C DGUW
- D DFUV

Answer: B

### Explanation:

Expression = ACXZ : BDWY :: CEVX : ?

The pattern followed is :

A	C	X	Z
(+1)	(+1)	(-1)	(-1)
B	D	W	Y

Similarly, for CEVX :

C	E	V	X
(+1)	(+1)	(-1)	(-1)
D	F	U	W

=> Ans - (B)

### Question 3

Select the related word/letters/numbers from the given alternatives:

37 : 65 :: 50 : ?

- A 75

- B 79
- C 82
- D 87

**Answer: C**

**Explanation:**

Expression =  $37 : 65 :: 50 : ?$

The pattern followed is  $n^2 + 1 : (n + 2)^2 + 1$

Eg =  $6^2 + 1 : (6 + 2)^2 + 1 = 37 : 65$

Similarly,  $7^2 + 1 = 50$

Thus,  $(7 + 2)^2 + 1 = 9^2 + 1 = 81 + 1 = 82$

=> Ans - (C)

**Question 4**

**For the following questions**

**Find the odd word/letters/number from the given alternatives.**

- A Thermometer
- B Barometer
- C Diameter
- D Hygrometer

**Answer: C**

**Explanation:**

Thermometer, Barometer and Hygrometer are instruments while a diameter is a geometric figure.

=> Ans - (C)

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**Question 5**

**For the following questions**

**Find the odd word/letters/number from the given alternatives.**

- A JF
- B UQ
- C PL
- D XS

**Answer: D**

**Explanation:**

(A) : J (-4 letters) = F

(B) : U (-4 letters) = Q

(C) : P (-4 letters) = L

(D) : X (-5 letters) = S

=> Ans - (D)

**Question 6**

For the following questions  
Find the odd word/letters/number from the given alternatives.

- A 46-52
- B 56-62
- C 66-72
- D 76-84

**Answer: D**

**Explanation:**

Difference between each pair :

- (A) :  $52 - 46 = 6$
- (B) :  $62 - 56 = 6$
- (C) :  $72 - 66 = 6$
- (D) :  $84 - 76 = 8$

=> Ans - (D)

**Question 7**

Arrange the following words as per their order in the dictionary

- Embody
- Embrace
- Embitter
- Emblem
- Embroidery

- A 3, 4, 2, 5, 1
- B 4, 2, 5, 1, 3
- C 4, 1, 2, 5, 3
- D 3, 4, 1, 2, 5

**Answer: D**

**Explanation:**

As per the dictionary,

= Embitter -> Emblem -> Embody -> Embrace -> Embroidery

≡ 34125

=> Ans - (D)

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**Question 8**

A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.  
CBA, FED, IHG, LKJ, ?

- A PRT

- B VUT
- C ONM
- D ZYX

**Answer: C**

**Explanation:**

Expression : CBA, FED, IHG, LKJ, ?

The pattern followed is that the terms are written in reverse order.

Eg : ABC  $\equiv$  CBA

and DEF  $\equiv$  FED

Thus, next term after JKL is = MNO  $\equiv$  ONM

=> Ans - (C)

**Question 9**

**A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series. 6, 12, 36, 144, 720, 4320, ?**

- A 30420
- B 30240
- C 31240
- D 32240

**Answer: B**

**Explanation:**

The numbers are multiplied by natural numbers.

$$6 \times 2 = 12$$

$$12 \times 3 = 36$$

$$36 \times 4 = 144$$

$$144 \times 5 = 720$$

$$720 \times 6 = 4320$$

$$4320 \times 7 = \mathbf{30240}$$

=> Ans - (B)

**Question 10**

**Introducing a woman, a man said "Her mother is the only daughter of my mother-in-law". How is the man related to the woman?**

- A Son
- B Brother
- C Husband
- D Father

**Answer: D**

**Explanation:**

Only daughter of the man's mother-in-law is the man's wife.

Now, the man's wife is the woman's mother.

Thus, the man is her father.

=> Ans - (D)

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### Question 11

Five children are standing in a row. O is third from M who is standing left of N, and P is on the left of Q who is second from N. What is the position of P from right?

- A Third
- B First
- C Fourth
- D Second

**Answer:** C

#### **Explanation:**

O is third from M who is standing left of N, => O \_ \_ M N

P is on the left of Q who is second from N, => O P Q M N

∴ Arrangement : **O P Q M N**

Thus, P is 4th from the right.

=> Ans - (C)

### Question 12

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

- A GENTLE
- B TEEN
- C GREEN
- D ENGINE

**Answer:** C

#### **Explanation:**

The word INTELLIGENCE does not contain any 'R', and thus word 'Green' cannot be formed.

=> Ans - (C)

### Question 13

If "GOAT" is coded as "HPBU", then how will "FROG" be coded as?

- A GSPH
- B PHSG
- C GSHP
- D PSHG

**Answer:** A

**Explanation:**

"GOAT" is coded as "HPBU"

The pattern followed is :

G	O	A	T
(+1)	(+1)	(+1)	(+1)
H	P	B	U

Similarly, for FROG :

F	R	O	G
(+1)	(+1)	(+1)	(+1)
G	S	P	H

=> Ans - (A)

## SSC CGL Tier-2 Previous Papers PDF

### Question 14

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

$$8900\alpha 100\oplus 5\theta 4\oplus 121\alpha 11 = ?$$

- A 58
- B 62
- C 158
- D 205

Answer: A

**Explanation:**

$$\text{Expression} = 8900\alpha 100\oplus 5\theta 4\oplus 121\alpha 11 = ?$$

$$\equiv 8900 \div 100 - 5 \times 4 - 121 \div 11$$

$$= 89 - 20 - 11 = 58$$

=> Ans - (A)

### Question 15

Some equations are solved on the basis of a certain system. On the same basis, find out the correct answer from amongst the four alternatives to the unsolved equation

$$1 \times 2 \times 3 = 231$$

$$3 \times 4 \times 5 = 453$$

$$5 \times 6 \times 7 = ?$$

- A 657
- B 675
- C 756
- D 765

Answer: B

**Explanation:**

The pattern followed is that the position of numbers are interchanged starting from the second number, then third and finally the first is written.

Eg :  $1 \times 2 \times 3 = 231$

and  $3 \times 4 \times 5 = 453$

Similarly,  $5 \times 6 \times 7 = 675$

=> Ans - (B)

#### Question 16

Select the missing numbers from the given alternatives

24	20	36
15	11	18
55	40	?

A 12

B 18

C 20

D 65

Answer: D

#### Explanation:

The pattern followed is that in the first row, the number in the middle is obtained by adding the other two and dividing the result by 3.

Eg :  $\frac{24+36}{3} = \frac{60}{3} = 20$

and  $\frac{15+18}{3} = \frac{33}{3} = 11$

Similarly,  $\frac{55+x}{3} = 40$

=>  $x = 120 - 55 = 65$

=> Ans - (D)

## SSC CGL Important Questions PDF

#### Question 17

Rajneesh started walking towards North. He took a left turn after walking 20 metres. He again took a right turn after walking 30 metres. Which direction is he facing now?

A North

B East

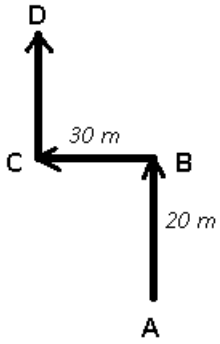
C West

D South

Answer: A

#### Explanation:





Let Rajneesh starts from point A and heads north for 20 m and reaches B, he then turns left towards west and walks for 30 m and reaches C. Finally, he turns right and reaches point D.

Thus, he is facing north direction.

=> Ans - (A)

**Question 18**

Consider the given statement/s to be true and decide which of the given conclusions/assumptions can definitely be drawn from the given statement.

**Statements:**

1. All books are trees.

2. All trees are lions.

**Conclusions:**

I. All books are lions.

II. All lions are books.

III. All trees are books

IV. Some lions are books.

A Only conclusions I and III follow

B Only conclusions I and IV follow

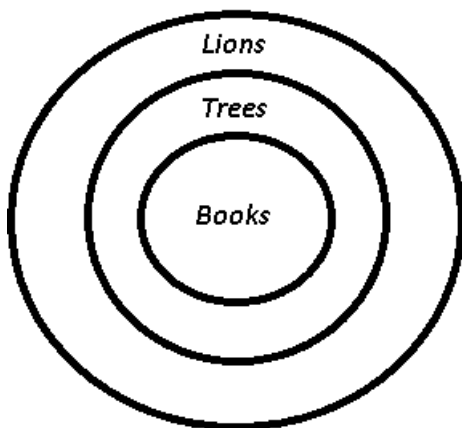
C None of the conclusions follow

D All conclusions follow

**Answer: B**

**Explanation:**

The venn diagram for above statements is :



**Conclusions:**

I. All books are lions = true

II. All lions are books = false

III. All trees are books = false

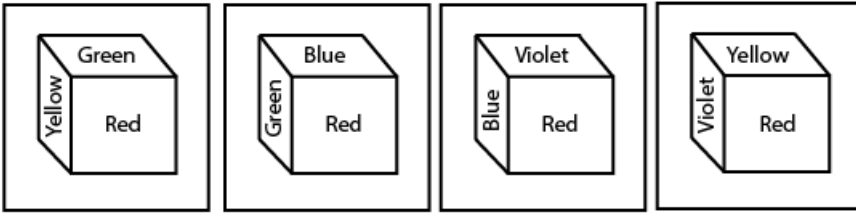
IV. Some lions are books = true.

Thus, only conclusions I and IV follow

=> Ans - (B)

**Question 19**

In the given cube, which colour is opposite to Blue?



A Green

B Red

C Violet

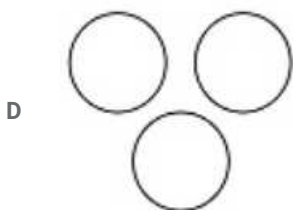
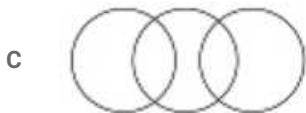
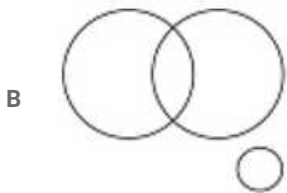
D Yellow

Answer: D

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**Question 20**

Identify the relationship that best represents the relationship among classes given below:  
Professors, Women and Clerks



Answer: C

**Explanation:**

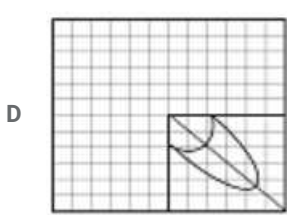
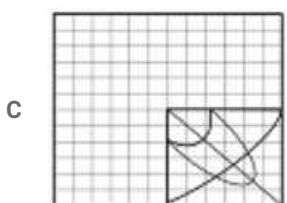
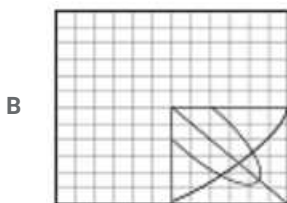
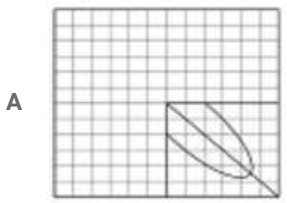
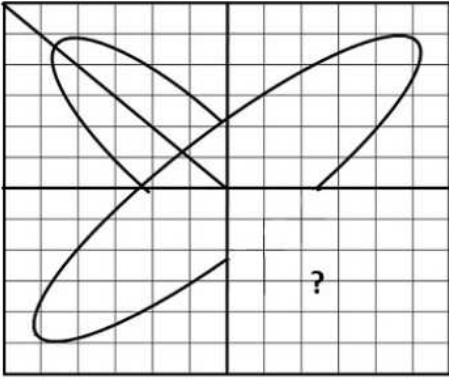
Some women can be professors and some can be clerks. But no professor can be clerk.

Thus, the third figure best describes above relationship.

=> Ans - (C)

**Question 21**

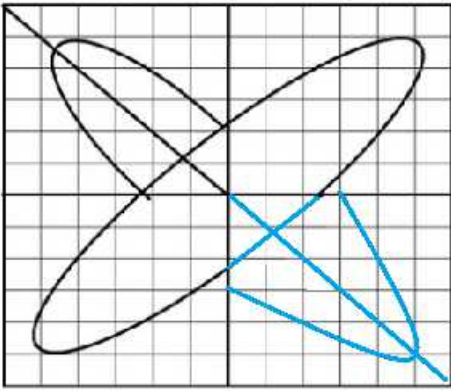
Which answer figure will complete the pattern in the figure?



Answer: D

**Explanation:**

When we complete the above figure, we get :

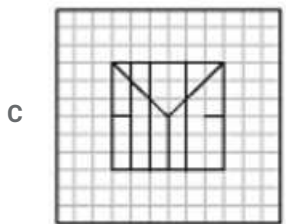
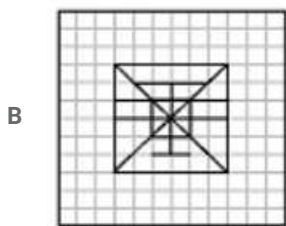
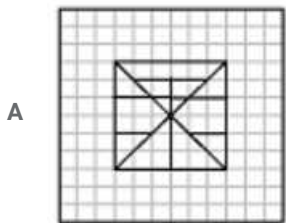
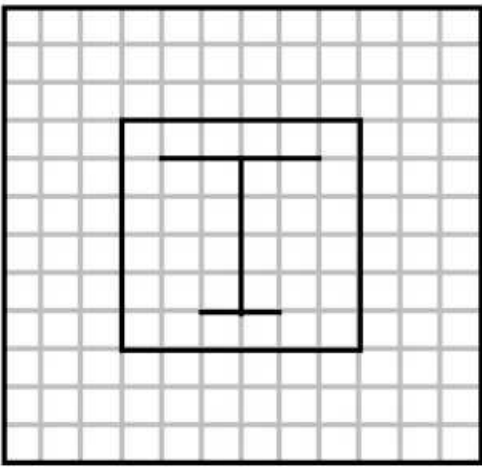


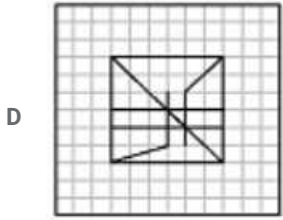
Now, the last figure is the closest to the above missing part in blue colour.

=> Ans - (D)

**Question 22**

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





Answer: B

Explanation:

The question figure is embedded in the following figure :

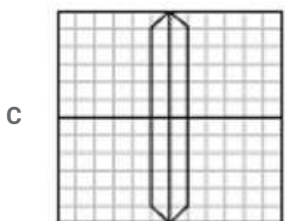
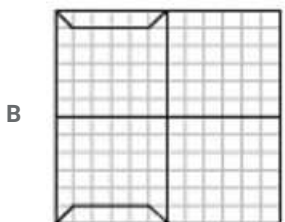
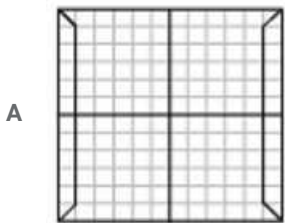
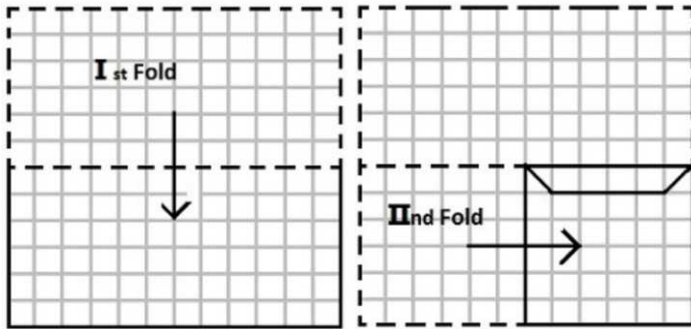


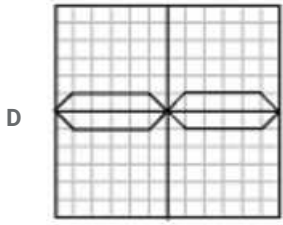
=> Ans - (B)

## General Science Notes for SSC CGL

Question 23

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

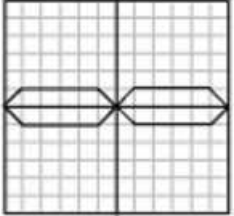




Answer: D

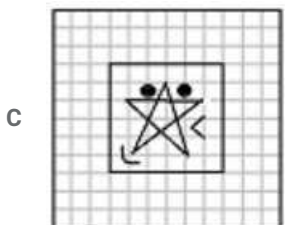
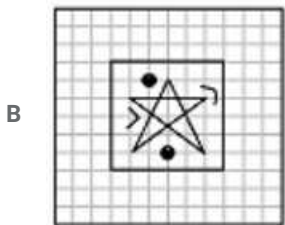
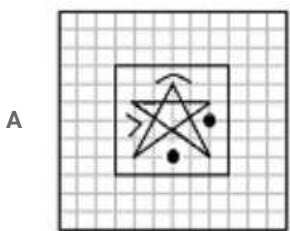
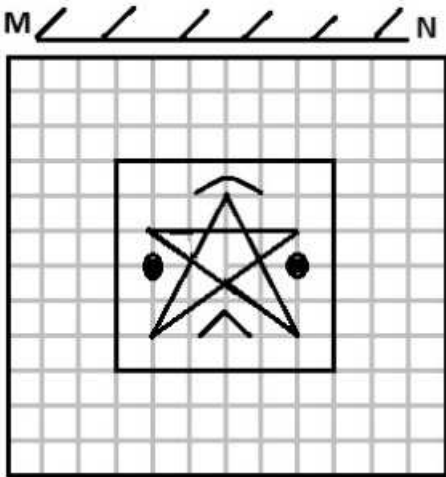
**Explanation:**

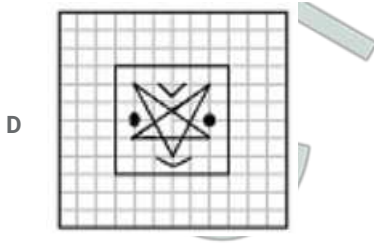
We can see clearly that Option D will be the opened figure of the given question figure.



**Question 24**

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





D

Answer: D

**Explanation:**

A horizontal mirror is placed, so the objects will turn upside down in the mirror image (e.g - an object at top right will appear at bottom right).

The half arrow which is pointing upwards below the star will appear as pointing down above the star, which is given in the last option.

=> Ans - (D)

**Question 25**

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., 'D' can be represented by 01, 13, etc., and 'H' can be represented by 55, 67, etc. Similarly you have to identify the set for the word 'LIKE'

**Matrix - I**

	0	1	2	3	4
0	C	D	E	F	G
1	F	G	C	D	E
2	D	E	F	G	C
3	E	F	G	C	D
4	G	C	D	E	F

**Matrix - II**

	5	6	7	8	9
5	H	K	L	I	N
6	I	N	H	K	L
7	K	L	I	N	H
8	L	I	N	H	K
9	N	H	K	L	I

- A 56, 58, 03, 02
- B 57, 65, 68, 02
- C 56, 22, 03, 02
- D 57, 68, 40, 02

Answer: B

**Explanation:**

(A) : 56, 58, 03, 02 = KIFE

(B) : 57, 65, 68, 02 = **LIKE**

(C) : 56, 22, 03, 02 = KFFE

(D) : 57, 68, 40, 02 = LKGE

=> Ans - (B)

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**General Awareness**

**Instructions**

For the following questions answer them individually

**Question 26**

What is 'net neutrality'?



- A Internet Service Providers and governments should treat all data on the internet equally
- B Piracy in internet must be curbed
- C Internet users must give out balanced opinions in social media sites
- D Internet should be kept free from malware and virus

**Answer: A**

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### Question 27

**Excise duty is levied on**

- A sale of goods
- B production of goods
- C import of goods
- D export of goods

**Answer: B**

### Question 28

**Golden Revolution in India refers to growth of:**

- A Militancy in the north-east.
- B Oilseeds production
- C Horticulture
- D Increased importing of gold

**Answer: C**

### Explanation:

Golden revolution in India refers to Fruits or Honey or Horticulture development.

### Question 29

**Water is used in a hot water bag because**

- A It is easily available
- B It has high specific gravity
- C It has high specific heat
- D It is a liquid substance

**Answer: C**

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**Question 30**

**What is the meaning of "Public Interest Litigation"?**

- A Anything of public interest
- B A case brought by victim to court, involving public interest.
- C A case brought by anyone to court involving public interest.
- D A directive issued by Supreme Court involving public interest

**Answer: C**

**Question 31**

**Who referred to Mahatma Gandhi as "Father of the Nation" for the first time?**

- A Jawaharlal Nehru
- B Sardar Vallabh Bhai Patel
- C C. Rajgopalachari
- D Subhash Chandra Bose

**Answer: D**

**Question 32**

**Which title, given by the British Government to Mahatma Gandhi, was surrendered during the non-cooperation movement?**

- A Hind Kesari
- B Rai Bahadur
- C Rt. Honourable
- D Kaiser-e-Hind

**Answer: D**

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**Question 33**

**The temperature of a liquid is 32° F. What is its temperature in Celsius scale?**

- A 32° C
- B 0° C
- C 100° C
- D 212° C

**Answer: B**

**Question 34**

**The point where total mass of a body is supposed to be concentrated is known as**

- A Dead centre
- B Centre of mass
- C Centre of gravity
- D Centre of motion

**Answer: B**

**Question 35**

**Which part of brain is also known as "little brain"?**

- A Cerebrum
- B Cerebellum
- C Thalamus
- D Hypothalamus

**Answer: B**

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**Question 36**

**Which organism is responsible for alcohol fermentation?**

- A Chlorella
- B Yeast
- C Agaricus
- D Puccinia

**Answer: B**

**Question 37**

**Which of the following groups of rivers have their source of origin in Tibet?**

- A Brahmaputra, Indus & Sutlej
- B Ganga, Sutlej & Yamuna
- C Brahmaputra, Ganga & Sutlej
- D Chenab, Ravi & Sutlej

**Answer: A**

**Question 38**

**The most ideal region for the cultivation of cotton in India is**

- A The Brahmaputra Valley
- B The Deccan Plateau

C The Indo-Gangetic Valley

D The Rann of Kutch

Answer: B

## SSC CHSL Previous Question papers (download pdf)

Question 39

Where do the electrical charges reside in a charged conductor?

A at the core

B throughout the body

C depended upon the nature of the body

D outer surface of the body

Answer: D

Question 40

The colour of the ocean appears to be blue because the sunlight falling on it is

A reflected

B refracted

C diffracted

D scattered

Answer: D

Question 41

In which mode can the computers that are associated send frames directly to each other?

A Adhoc mode

B Infrastructure mode

C Structured mode

D Anonymous mode

Answer: A

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

Question 42

What was the immediate cause of the Mutiny of 1857?

A The discontentment of the soldiers

B The use of greased cartridges in the new Enfield Rifle

C The social conditions of India

D The introduction of railways and telegraphs

**Answer: B**

**Question 43**

**Who introduced the "Doctrine of Lapse" to expand British territories in India?**

A Lord Hastings

B Lord Wellesley

C Lord William Bentinck

D Lord Dalhousie

**Answer: D**

**Question 44**

**HRIDAY scheme launched by Urban Development Ministry aims at**

A Education of girl child

B Development of smart cities

C Urban sewage treatment

D Development of heritage sites

**Answer: D**

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**Question 45**

**Global warming is expected to result in**

A Increase in sea level

B Change in crop pattern

C Change in coastal line

D All of these

**Answer: D**

**Question 46**

**Who appoints and dismisses the gazetted officials of the Union Government?**

A The President of India

B The Prime Minister of India

C The Home Minister of India

D The Finance Minister of India

**Answer: A**

**Question 47**

The industry having the largest investment in Indian Economy is?

- A Tea
- B Cement
- C Steel
- D Jute

**Answer: C**

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**Question 48**

Ajanta Ellora Caves are situated near which of the following cities?

- A Mount Abu
- B Aurangabad
- C Bijapur
- D Madurai

**Answer: B**

**Question 49**

Which of the following is a name of US Parliament?

- A Diet
- B Senate
- C Congress
- D House of Commons

**Answer: C**

**Question 50**

Charles Correa is a renowned Indian

- A Freedom fighter
- B Painter
- C Architect, urban planner
- D Award winning doctor

**Answer: C**

**SSC CGL Free Mock Test**

# Mathematics

## Instructions

For the following questions answer them individually

### Question 51

A father can do job as fast as 2 sons working together. If one son does the job in 3 hours and the other in 6 hours, the number of hours taken by the father, to do the job alone is

- A 1
- B 2
- C 3
- D 4

Answer: B

### Explanation:

Time taken by the two sons in doing the job = 3 hours and 6 hours

$$\Rightarrow \text{Father's efficiency} = \frac{1}{3} + \frac{1}{6}$$

$$= \frac{2+1}{6} = \frac{3}{6} = \frac{1}{2}$$

$\therefore$  Time taken by father = 2 hours

$\Rightarrow$  Ans - (B)

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### Question 52

The perimeter of a rhombus is 240 m and the distance between any two parallel sides is 20 m. The area of the rhombus in sq.m. is

- A 600
- B 1200
- C 2400
- D 4800

Answer: B

### Explanation:

Let the side of the rhombus =  $a$  m

$$\Rightarrow \text{Perimeter} = 4a = 240$$

$$\Rightarrow a = \frac{240}{4} = 60 \text{ m}$$

Height of rhombus =  $h = 20$  m

$\therefore$  Area of rhombus =  $a \times h$

$$= 60 \times 20 = 1200 \text{ m}^2$$

$\Rightarrow$  Ans - (B)

### Question 53

A man sold an article for Rs. 450, after allowing a discount of  $16 \frac{2}{3}$  % on the printed price. What is that printed price?

- A Rs.525

B Rs.530

C Rs.535

D Rs.540

**Answer: D**

**Explanation:**

Let the printed price = Rs.  $x$

$$\text{Discount \%} = 16\frac{2}{3} = \frac{50}{3} \%$$

Selling price = Rs. 450

$$\Rightarrow \text{Discount \%} = \frac{MP-SP}{MP} \times 100$$

$$\Rightarrow \frac{x-450}{x} \times 100 = \frac{50}{3}$$

$$\Rightarrow \frac{x-450}{x} = \frac{1}{6}$$

$$\Rightarrow 6x - 2700 = x$$

$$\Rightarrow 6x - x = 5x = 2700$$

$$\Rightarrow x = \frac{2700}{5} = \text{Rs. } 540$$

$\Rightarrow$  Ans - (D)

**Question 54**

A sum of Rs. 770 has been divided among A, B, C in such a way that A receives  $\frac{2}{9}$ th of what B and C together receive. Then A's share is

A Rs.140

B Rs.154

C Rs.165

D Rs.170

**Answer: A**

**Explanation:**

Let B and C together receive = Rs.  $9x$

$\Rightarrow$  Amount received by A = Rs.  $2x$

$$\text{Total amount} = 9x + 2x = 770$$

$$\Rightarrow 11x = 770$$

$$\Rightarrow x = \frac{770}{11} = 70$$

$$\therefore \text{A's share} = 2 \times 70 = \text{Rs. } 140$$

$\Rightarrow$  Ans - (A)

## SSC CGL Previous Papers (DOWNLOAD PDF)

**Question 55**

A man bought 4 dozen eggs at Rs. 24 per dozen and 2 dozen eggs at Rs. 32 per dozen. To gain 20% on the whole, he should sell the eggs at

- A 16 per dozen
- B 21 per dozen
- C 32 per dozen
- D 35 per dozen

**Answer: C**

**Explanation:**

The man bought 4 dozen eggs for = Rs. 24 per dozen and 2 dozen eggs at Rs. 32 per dozen

$$\Rightarrow \text{Total cost price} = (4 \times 24) + (2 \times 32)$$

$$= 96 + 64 = \text{Rs. } 160$$

Profit % = 20%

$$\Rightarrow \text{Selling price} = \frac{120}{100} \times 160 = \text{Rs. } 192$$

$$\therefore \text{He should sell the 6 dozen eggs for} = \frac{192}{6} = \text{Rs. } 32 \text{ per dozen}$$

$\Rightarrow$  Ans - (C)

**Question 56**

**P's salary is 25% higher than Q, what percentage is Q's salary lower than that of P?**

- A 20
- B 29
- C 31
- D  $33\frac{1}{3}$

**Answer: A**

**Explanation:**

Let Q's salary = Rs.  $100x$

$$\text{P's salary is 25% higher than Q, } \Rightarrow \text{P's salary} = 100x + \left(\frac{25}{100} \times 100x\right) = \text{Rs. } 125x$$

$$\Rightarrow \text{Q's salary is lower than that of P by} = \frac{125x - 100x}{125x} \times 100$$

$$= \frac{1}{5} \times 100 = 20\%$$

$\Rightarrow$  Ans - (A)

**Question 57**

**A and B start running at the same time and from the same point around a circle. If A can complete one round in 40 seconds and B in 50 seconds, how many seconds will they take to reach the starting point simultaneously?**

- A 10
- B 200
- C 90
- D 2000

**Answer: B**

**Explanation:**



Time taken by A to complete 1 round = 40 seconds and by B = 50 seconds

=> Time taken by them to reach the starting point simultaneously = L.C.M.(40,50)

= 200 seconds

=> Ans - (B)

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### Question 58

If  $x - \frac{1}{3x} = 3$ , the value of  $3(x - \frac{1}{3x})$  is

A -1

B 1

C -2

D 2

Answer: B

### Question 59

If  $p = 3 + \frac{1}{p}$ , the value of  $p^4 + \frac{1}{p^4}$  is

A 81

B 27

C 120

D 119

Answer: D

### Explanation:

Given :  $p = 3 + \frac{1}{p}$

=>  $p - \frac{1}{p} = 3$

Squaring both sides,

=>  $(p - \frac{1}{p})^2 = (3)^2$

=>  $p^2 + \frac{1}{p^2} - 2(p)(\frac{1}{p}) = 9$

=>  $p^2 + \frac{1}{p^2} - 2 = 9$

=>  $p^2 + \frac{1}{p^2} = 9 + 2 = 11$

Again squaring both sides, we get :

=>  $(p^2 + \frac{1}{p^2})^2 = (11)^2$

=>  $p^4 + \frac{1}{p^4} + 2(p^2)(\frac{1}{p^2}) = 121$

=>  $p^4 + \frac{1}{p^4} = 121 - 2 = 119$

=> Ans - (D)

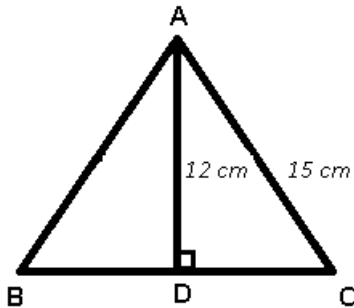
Question 60

$\triangle ABC$  is an isosceles triangle with  $AB = AC = 15$  cm and altitude from A on BC is 12 cm. Length of side BC is

- A 9 cm
- B 12 cm
- C 18 cm
- D 20 cm

Answer: C

Explanation:



Given :  $\triangle ABC$  is an isosceles triangle with  $AB = AC = 15$  cm. AD is the altitude = 12 cm

To find : BC = ?

Solution : Altitude of an isosceles triangle bisects the opposite side,  $\Rightarrow BD = CD = \frac{BC}{2}$

In  $\triangle ADC$ ,

$$\Rightarrow (CD)^2 = (AC)^2 - (AD)^2$$

$$\Rightarrow (CD)^2 = (15)^2 - (12)^2$$

$$\Rightarrow (CD)^2 = 225 - 144 = 81$$

$$\Rightarrow CD = \sqrt{81} = 9 \text{ cm}$$

$$\therefore BC = 2 \times CD$$

$$= 2 \times 9 = 18 \text{ cm}$$

$\Rightarrow$  Ans - (C)

## SSC CGL Tier-2 Previous Papers PDF

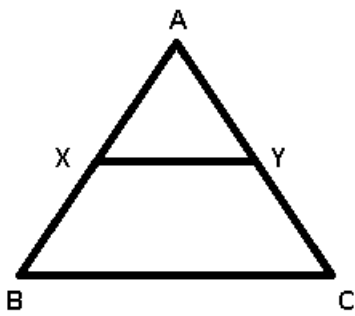
Question 61

The mid points of AB and AC of a triangle ABC are respectively X & Y. If  $BC + XY = 12$  units, then the value of  $BC - XY$  is:

- A 2 units
- B 6 units
- C 8 units
- D 4 units

Answer: D

Explanation:



Given : X and Y are mid points of AB and AC respectively of triangle ABC and  $BC + XY = 12$  units -----(i)

$$\Rightarrow \frac{AX}{AB} = \frac{AY}{AC} = \frac{XY}{BC} = \frac{1}{2} \text{ -----(ii)}$$

To find :  $BC - XY = ?$

Solution : From equation (ii), let  $BC = 2z$  and  $XY = z$

Substituting it in equation (i),  $\Rightarrow 2z + z = 3z = 12$

$$\Rightarrow z = \frac{12}{3} = 4 \text{ units}$$

$$\Rightarrow BC = 8 \text{ units and } XY = 4 \text{ units}$$

$$\therefore BC - XY = 8 - 4 = 4 \text{ units}$$

$\Rightarrow$  Ans - (D)

#### Question 62

Which of the following relations is correct for  $0 < \theta < 90^\circ$

- A  $\sin \theta = \sin 2\theta$
- B  $\sin \theta < \sin 2\theta$
- C  $\sin \theta > \sin 2\theta$
- D  $\sin \theta = \operatorname{cosec} \theta$

**Answer: B**

**Explanation:**

Let  $\theta = 30^\circ$

$$\text{Then, } \sin \theta = \sin 30^\circ = \frac{1}{2}$$

$$\sin 2\theta = \sin 60^\circ = \frac{\sqrt{3}}{2}$$

Comparing, both,

$$\frac{1}{2} < \frac{\sqrt{3}}{2}$$

Let  $\theta = 45^\circ$

$$\text{Then, } \sin \theta = \sin 45^\circ = \frac{1}{\sqrt{2}}$$

$$\sin 2\theta = \sin 90^\circ = 1$$

Comparing both,

$$\frac{1}{\sqrt{2}} < 1$$

Hence, we can say that  $\sin \theta < \sin 2\theta$  for  $0 < \theta < 90^\circ$

**Question 63**

The difference between two numbers is 9 and the difference between their squares is 207. The numbers are

- A 17, 8
- B 16, 7
- C 15, 6
- D 23, 14

**Answer: B**

**Explanation:**

Let the numbers be  $x$  and  $y$

$$\text{Difference between two numbers} = (x - y) = 9 \text{ -----(i)}$$

$$\text{Difference between their squares} = x^2 - y^2 = 207$$

$$\Rightarrow (x - y)(x + y) = 207$$

Substituting value from equation (i), we get :

$$\Rightarrow 9 \times (x + y) = 207$$

$$\Rightarrow (x + y) = \frac{207}{9} = 23 \text{ -----(ii)}$$

Adding equations (i) and (ii),

$$\Rightarrow 2x = 9 + 23 = 32$$

$$\Rightarrow x = \frac{32}{2} = 16$$

Substituting it in equation (ii),  $\Rightarrow y = 23 - 16 = 7$

$\therefore$  The two numbers are 16 and 7

$\Rightarrow$  Ans - (B)

## SSC CGL Important Questions PDF

**Question 64**

The average of 20 numbers is calculated as 35. It is discovered later on that while calculating the average, one number, namely 85, was read as 45. The correct average is

- A 36
- B 36.5
- C 37
- D 37.5

**Answer: C**

**Explanation:**

Average of 20 numbers = 35

$$\Rightarrow \text{Sum of 20 numbers} = 20 \times 35 = 700$$

Now, adding 85 instead of 45

$$\Rightarrow \text{Correct sum} = 700 - 45 + 85 = 740$$

$$\therefore \text{Correct mean} = \frac{740}{20} = 37$$

=> Ans - (C)

### Question 65

If  $x^2 - xy + y^2 = 2$  and  $x^4 + x^2y^2 + y^4 = 6$ , then the value of  $x^2 + xy + y^2$  is:

- A 1
- B 12
- C 3
- D 36

Answer: C

### Explanation:

$$\text{Given, } x^2 - xy + y^2 = 2$$

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

Squaring on both sides

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

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

$$\text{Given, } x^4 + x^2y^2 + y^4 = 6$$

$$\Rightarrow 6 = 4 + 4xy$$

$$4xy = 2$$

$$xy = 0.5$$

$$\text{From (1), } x^2 + xy + y^2 = 2 + xy + xy = 2 + 0.5 + 0.5 = 3$$

### Question 66

If  $a^2 + 13b^2 + c^2 - 4ab - 6bc = 0$ , then a:b:c is

- A 1:2:3
- B 2:3:1
- C 2:1:3
- D 1:3:2

Answer: C

### Explanation:

$$\text{Expression: } a^2 + 13b^2 + c^2 - 4ab - 6bc = 0$$

$$\Rightarrow a^2 + 4b^2 - 2(a)(2b) + 9b^2 + c^2 - 2(3b)(c) = 0$$

$$\Rightarrow (a - 2b)^2 + (3b - c)^2 = 0$$

Since, sum of two positive numbers is zero, thus both the numbers = 0

$$\Rightarrow a - 2b = 0 \text{ and } 3b - c = 0$$

$$\Rightarrow a = 2b \text{ and } 3b = c$$

Multiplying by '3', we get :

$$\Rightarrow 3a = 6b \text{ and } 9b = 3c$$

$$\Rightarrow \frac{a}{b} = \frac{6}{3} \text{ and } \frac{b}{c} = \frac{3}{9}$$

$$\Rightarrow a : b : c = 6 : 3 : 9$$

$$\Rightarrow \text{Required ratio} = 2 : 1 : 3$$

=> Ans - (C)

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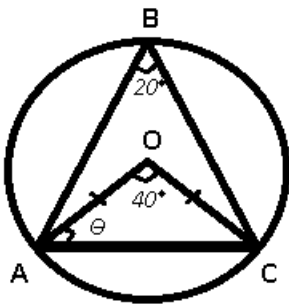
### Question 67

The circum-centre of a triangle ABC is O. If  $\angle BAC = 85^\circ$ ,  $\angle BCA = 75^\circ$ , then  $\angle OAC$  is of

- A  $70^\circ$
- B  $72^\circ$
- C  $75^\circ$
- D  $74^\circ$

Answer: A

Explanation:



Given : O is the circum-centre of triangle ABC.  $\angle BAC = 85^\circ$ ,  $\angle BCA = 75^\circ$

To find :  $\angle OAC = \theta = ?$

Solution : In  $\triangle ABC$

$$\Rightarrow \angle A + \angle B + \angle C = 180^\circ$$

$$\Rightarrow 85^\circ + \angle B + 75^\circ = 180^\circ$$

$$\Rightarrow \angle B = 180 - 160 = 20^\circ$$

In a circle, angle subtended by an arc at the centre is double the angle subtended by the same arc on any other point on the circle

$$\Rightarrow \angle AOC = 2 \times \angle ABC$$

$$\Rightarrow \angle AOC = 2 \times 20 = 40^\circ$$

Also, in  $\triangle AOC$ ,  $OA = OC$  (radii of circle),  $\Rightarrow \angle OAC = \angle OCA = \theta$

$$\Rightarrow \angle AOC + \angle OAC + \angle OCA = 180^\circ$$

$$\Rightarrow 40^\circ + \theta + \theta = 180^\circ$$

$$\Rightarrow 2\theta = 180 - 40 = 140^\circ$$

$$\Rightarrow \theta = \frac{140}{2} = 70^\circ$$

=> Ans - (A)

### Question 68

Radius of the in-circle of an equilateral  $\triangle ABC$  of sides  $2\sqrt{3}$  units is x cm. The value of x is

- A  $\frac{1}{3}$
- B  $\frac{1}{2}$

C 1

D  $\sqrt{3}$

Answer: C

Explanation:

In-radius of a triangle =  $r = \frac{\Delta}{s}$

Side of equilateral triangle =  $2\sqrt{3}$  units

$\Rightarrow$  Semi-perimeter =  $s = \frac{2\sqrt{3}+2\sqrt{3}+2\sqrt{3}}{2} = 3\sqrt{3}$  units

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

$= \frac{\sqrt{3}}{4} \times (2\sqrt{3})^2 = 3\sqrt{3}$

$\therefore r = \frac{3\sqrt{3}}{3\sqrt{3}} = 1$

$\Rightarrow$  Ans - (C)

Question 69

If  $\tan 3\theta \times \tan 7\theta = 1$ , then the value of  $\tan(\theta + 36^\circ)$  is

A  $\frac{1}{\sqrt{3}}$

B 0

C 1

D  $\sqrt{3}$

Answer: C

Explanation:

Given :  $\tan 3\theta \times \tan 7\theta = 1$

$\Rightarrow \tan 3\theta = \frac{1}{\tan 7\theta}$

$\Rightarrow \tan 3\theta = \cot 7\theta$

$\Rightarrow \tan 3\theta = \tan(90^\circ - 7\theta)$

$\Rightarrow 3\theta = 90^\circ - 7\theta$

$\Rightarrow 3\theta + 7\theta = 10\theta = 90^\circ$

$\Rightarrow \theta = \frac{90}{10} = 9^\circ$

$\therefore \tan(\theta + 36^\circ)$

$= \tan(9 + 36)^\circ = \tan(45^\circ) = 1$

$\Rightarrow$  Ans - (C)

## General Science Notes for SSC CGL

Question 70

If the angle of elevation of a cloud from a point 200 m above a lake is  $30^\circ$  and the angle of depression of its reflection in the lake is  $60^\circ$ . Then the height of the cloud above the lake is

A 100 m

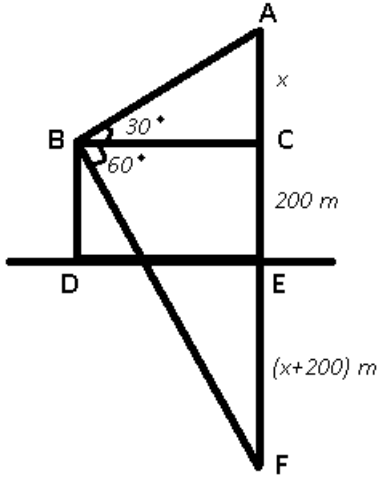
B 200 m

C 300 m

D 400 m

Answer: D

Explanation:



Given : F is the reflection of cloud at point A and CE = 200 m

To find : AE = ?

Solution : In  $\triangle ABC$ ,

$$\Rightarrow \tan(30^\circ) = \frac{AC}{BC}$$

$$\Rightarrow \frac{1}{\sqrt{3}} = \frac{x}{BC}$$

$$\Rightarrow BC = x\sqrt{3} \text{-----(i)}$$

Similarly, in  $\triangle BCF$ ,

$$\Rightarrow \tan(60^\circ) = \frac{CF}{BC}$$

$$\Rightarrow \sqrt{3} = \frac{x+200+200}{x\sqrt{3}} \quad [\text{Using (i)}]$$

$$\Rightarrow 3x = x + 400$$

$$\Rightarrow 3x - x = 2x = 400$$

$$\Rightarrow x = \frac{400}{2} = 200 \text{ m}$$

$$\therefore AE = AC + CE$$

$$= 200 + 200 = 400 \text{ m}$$

$\Rightarrow$  Ans - (D)

#### Question 71

The difference between the simple interest and compound interest (compounded annually) on Rs. 40,000 for 3 years at 8% per annum is

A Rs.684.32

B Rs.788.48

C Rs.784.58

D Rs.4000



Answer: B

**Explanation:**

Principal (P) = Rs. 40,000

Rate of interest (r) = 8% and time period (t) = 3 years

$$\text{Simple interest} = \frac{P \times r \times t}{100}$$

$$= \frac{40,000 \times 8 \times 3}{100}$$

$$= 400 \times 24 = \text{Rs. } 9600$$

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

$$= 40,000 \left[ \left( 1 + \frac{8}{100} \right)^3 - 1 \right]$$

$$= 40,000 \left[ \left( \frac{27}{25} \right)^3 - 1 \right]$$

$$= 40,000 \left( \frac{19683 - 15625}{15625} \right) = 40,000 \times \frac{4058}{15625}$$

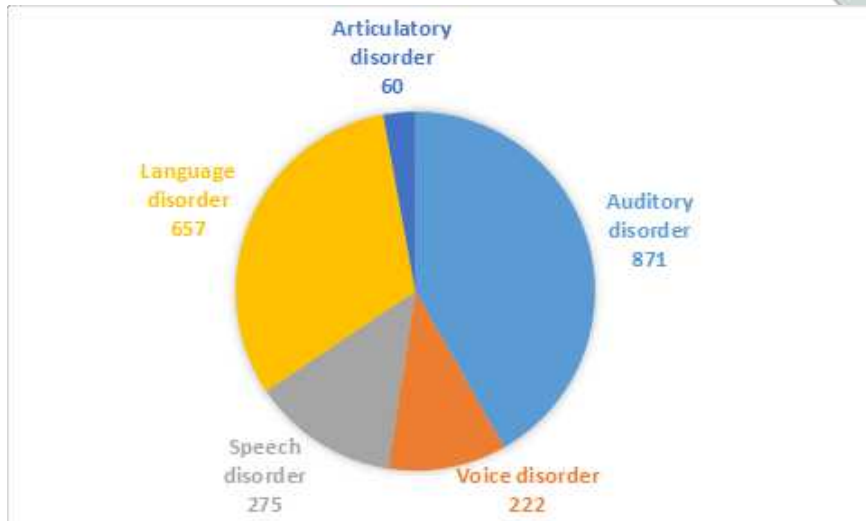
$$= \text{Rs. } 10388.48$$

$$\therefore \text{C.I.} - \text{S.I.} = 10388.48 - 9600 = \text{Rs. } 788.48$$

=> Ans - (B)

**Instructions**

The pie-chart shows Distribution of Special Children Population during the year 1994-96. Study the pie-chart and answer the following questions.



**Question 72**

Find the approximate percentage distribution of children with auditory disorder.

- A 43.7%
- B 42.7%
- C 41.7%
- D 40.7%

Answer: C

**Explanation:**

Number of cases with auditory disorder = 871

Total number of cases in different types of special children during the year 1994-96

$$= 60 + 871 + 222 + 275 + 657 = 2085$$

$$\Rightarrow \text{Required \%} = \frac{871}{2085} \times 100$$

$$= \frac{17420}{417} = 41.7\%$$

$\Rightarrow$  Ans - (C)

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### Question 73

What is the average number of cases in different types of special children during the year 1994-96.

A 417

B 413

C 433

D 465

**Answer:** A

#### Explanation:

Total number of cases in different types of special children during the year 1994-96

$$= 60 + 871 + 222 + 275 + 657 = 2085$$

$$\Rightarrow \text{Required average} = \frac{2085}{5} = 417$$

$\Rightarrow$  Ans - (A)

### Question 74

Find the ratio between articulatory disorder and speech disorder cases.

A 21:55

B 55:21

C 55:12

D 12:55

**Answer:** D

#### Explanation:

Number of children with articulatory disorder = 60

Number of children with speech disorder = 275

$$\Rightarrow \text{Required ratio} = \frac{60}{275} = \frac{12}{55}$$

Thus, ratio between articulatory disorder and speech disorder cases = 12 : 55

$\Rightarrow$  Ans - (D)

### Question 75

What is the ratio between language disorder and the average of the remaining disorder cases.

A 219:119

B 119:219

C 919:419

D 729:529

Answer: A

**Explanation:**

Number of children with language disorder = 657

Number of children with remaining disorder cases =  $60+871+222+275 = 1428$

=> Average number of children with remaining disorder cases =  $\frac{1428}{4} = 357$

∴ Required ratio =  $\frac{657}{357} = \frac{219}{119}$

=> Ans - (A)

## SSC Exam Free Videos (Youtube)

### English

**Instructions**

For the following questions answer them individually

**Question 76**

In the following question, out of the four alternatives, choose the word which best expresses the meaning of the given word and click the button corresponding to it.

**COPIOUS**

A VAST

B IDENTICAL

C PLENTIFUL

D MESSY

Answer: C

## SSC Free Preparation App

**Question 77**

In the following question, out of the four alternatives, choose the word which is opposite in meaning to the given word and click the button corresponding to it.

**EXTRANEIOUS**

A UNUSUAL

B DISPIRITED

C RELEVANT

D INTRUSIVE

Answer: C

**Question 78**

Four words are given, out of which only one word is spelt correctly. Choose the correctly spelt word and click the button corresponding to it.

A discipency

- B discrepancy
- C discrepancy
- D descripancy

**Answer: C**

**Explanation:**

'Discrepancy' is the correct spelling of the word.

**Question 79**

In the following questions, one part of the sentence may have an error. Find out which part of the sentence has an error and click the button corresponding to it. If the sentence is free from error, click the "No error" option.

The Statesman has(a)/the largest circulation of any (b)/English dailies.(c)/No Error(d)

- A The Statesman has
- B the largest circulation of any
- C English dailies
- D No Error

**Answer: B**

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**Question 80**

In the following questions, one part of the sentence may have an error. Find out which part of the sentence has an error and click the button corresponding to it. If the sentence is free from error, click the "No error" option.

A period of six years(a)/ have elapsed(b)/ since I last saw her.(c)/No Error(d)

- A A period of six years
- B have elapsed
- C since I last saw her
- D No Error

**Answer: B**

**Question 81**

In the following questions, one part of the sentence may have an error. Find out which part of the sentence has an error and click the button corresponding to it. If the sentence is free from error, click the "No error" option.

For several years now(a)/my newspaper agent has been spelling(b)/my name incorrectly.(c)/No Error(d)

- A For several years now
- B my newspaper agent has been spelling
- C my name incorrectly
- D No Error

**Answer: D**

**Explanation:**

The given sentence has no error and hence Option D is the correct answer.

**Question 82**

The sentences given with blanks are to be filled with an appropriate word(s). Four alternatives are suggested for each question. For each question, choose the correct alternative and click the button corresponding to it.

One of the reasons the impressionists caused such a scandal was \_\_\_\_\_ their colours were too bright.

- A because of which
- B due to
- C because
- D of

**Answer: C**

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**Question 83**

The sentences given with blanks are to be filled with an appropriate word(s). Four alternatives are suggested for each question. For each question, choose the correct alternative and click the button corresponding to it.

She must sometimes ..... to run away.

- A has wanted
- B have wanted
- C having want
- D has want

**Answer: B**

**Explanation:**

Since the given sentence contains 'must', it should be continued with 'have' and hence 'She must sometimes have wanted to run away' is the correct form of the sentence.

**Question 84**

The sentences given with blanks are to be filled with an appropriate word(s). Four alternatives are suggested for each question. For each question, choose the correct alternative and click the button corresponding to it.

The bank decided to \_\_\_\_\_ them the money as they were reliable clients.

- A let
- B lend
- C borrow
- D lease

**Answer: B**

**Question 85**

In each of the questions, four alternatives are given for the Idiom/Phrase. Choose the alternative which best expresses the meaning of the Idiom/Phrase and click the button corresponding to it.

**Smooth ruffled feathers**

- A Comb untidy hair
- B Make people feel less offended
- C Tousle someone's hair
- D Stroke a pet animal

**Answer: B**

**SSC CHSL Previous Question papers (download pdf)**

**Question 86**

In each of the questions, four alternatives are given for the Idiom/Phrase. Choose the alternative which best expresses the meaning of the Idiom/Phrase and click the button corresponding to it.

**Assume airs**

- A Take tight
- B Remain calm
- C Act innocent
- D Pretend superiority

**Answer: D**

**Question 87**

In each of the questions, four alternatives are given for the Idiom/Phrase. Choose the alternative which best expresses the meaning of the Idiom/Phrase and click the button corresponding to it.

**Play truant**

- A Play a tyrant
- B Stay away from duty
- C Be responsible
- D Be alert

**Answer: B**

**Question 88**

Out of the four alternatives, choose the one which can be substituted for the given words/sentences and click the button corresponding to it.

**One who studies the working of the human mind.**

- A Anthropologist
- B Psychologist

C Neurologist

D Ethnologist

**Answer: B**

**Explanation:**

Anthropologist - Persons who study humans within past and present societies.

Psychologist - One who studies the human mind.

Neurologist - One who studies the nervous system.

Ethnologist - One who studies different societies and culture.

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**Question 89**

Out of the four alternatives, choose the one which can be substituted for the given words/sentences and click the button corresponding to it.

Place given to soldiers to live in

A Barracks

B Trench

C Garage

D Quay

**Answer: A**

**Question 90**

Out of the four alternatives, choose the one which can be substituted for the given words/sentences and click the button corresponding to it.

A person of South African Dutch descent

A Boar

B Boer

C Boor

D Bore

**Answer: B**

**Question 91**

A sentence/a part of the sentence is underlined. Four alternatives are given to the underlined part which will improve the sentence. Choose the correct alternative and click the button corresponding to it. In case no improvement is needed, click the button corresponding to "No improvement".

She took the cycle which he bought yesterday.

A that he bought yesterday.

B that he had bought yesterday

C that he has bought yesterday

D No Improvement

Answer: B

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### Question 92

A sentence/a part of the sentence is underlined. Four alternatives are given to the underlined part which will improve the sentence. Choose the correct alternative and click the button corresponding to it. In case no improvement is needed, click the button corresponding to "No improvement".

I must say to a feeling of uneasiness.

- A confess
- B connive
- C utter
- D No Improvement

Answer: A

### Question 93

A sentence/a part of the sentence is underlined. Four alternatives are given to the underlined part which will improve the sentence. Choose the correct alternative and click the button corresponding to it. In case no improvement is needed, click the button corresponding to "No improvement".

The police booked a case against the taxi driver for wrong parking.

- A restricted
- B wrote
- C filed
- D No Improvement

Answer: C

### Question 94

A sentence/a part of the sentence is underlined. Four alternatives are given to the underlined part which will improve the sentence. Choose the correct alternative and click the button corresponding to it. In case no improvement is needed, click the button corresponding to "No improvement".

One of our students originates from Leh.

- A comes
- B origins
- C belongs
- D No Improvement

Answer: A

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**Question 95**

A sentence/a part of the sentence is underlined. Four alternatives are given to the underlined part which will improve the sentence. Choose the correct alternative and click the button corresponding to it. In case no improvement is needed, click the button corresponding to "No improvement".

Scarcely had he left the place when his friend came.

- A He had scarcely leave
- B He had left scarcely
- C He scarcely had left
- D No Improvement

**Answer: D**

**Instructions**

A passage is given with 5 questions following it. Read the passage carefully and choose the best answer to each question out of the four alternatives and click the button corresponding to it.

He waited a moment in surprise, wondering why she did not come nearer, and then, maddened by hunger, he dived at the fish. With a loud scream he fell outwards and downwards into space. His mother had soared upwards. As he passed beneath her, he heard the swish of her wings. Then a monstrous terror seized him and his heart stood still. He could hear nothing. But it only lasted a moment. The next moment, he felt his wings spread outwards. The wind rushed against his breast feathers, then under his stomach and against his wings. He could feel the tips of his wings cutting through the air. He was not falling headlong now. He was soaring gradually downwards and outwards.

He was no longer afraid. He just felt a bit dizzy. Then, he flapped his wings once and he soared upwards. he uttered a joyous scream and flapped them again. He soared higher. He raised his breast and banked against the wind. His mother swooped past him, her wings making a loud noise. He answered her with another scream.

**Question 96**

The young seagull dived at the fish

- A maddened by hunger
- B maddened by want
- C out of spite
- D out of loneliness

**Answer: A**

**Explanation:**

From the first paragraph, we can say that the young seagull dived at the fish maddened by hunger.

**Question 97**

His heart stood still because he was seized by \_\_\_\_\_

- A a monstrous fury
- B courage
- C a monstrous terror
- D joy

**Answer: C**

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Question 98

He was not falling headlong but

- A he was afraid
- B he was soaring downwards and outwards
- C his stomach was full
- D he was joining his father

Answer: B

Question 99

The seagull just felt dizzy

- A and was filled with fear
- B and was no longer afraid
- C and did not flap his wings anymore
- D and dived lower

Answer: B

Question 100

What did the young seagull do when his mother swooped past him?

- A Let out a joyous scream
- B Screamed at her in anger
- C Made a loud noise
- D Flapped anxiously

Answer: A

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