



## SSC CGL 2014 Tier 1 19 Oct shift 2

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# Reasoning

## Instructions

In each of the following questions, select the related word/letters/number from the given alternatives.

### Question 1

**Demographer : People :: Philatelist : ?**

- A Fossils
- B Stamps
- C Photography
- D Music

**Answer: B**

### Explanation:

A demographer is a person who study about people, similarly a philatelist is a one who loves stamps.

=> Ans - (B)

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### Question 2

**RIAHC : CHAIR :: OGNAM : ?**

- A OGNMA
- B TANGO
- C MANGO
- D ANGMO

**Answer: C**

### Explanation:

Expression = RIAHC : CHAIR

The pattern followed is that the word is written in reverse order.

Eg = Reverse of 'RIAHC' = 'CHAIR'

Similarly, for OGNAM : **MANGO**

=> Ans - (C)

### Question 3

**PNS : OOT : DBH : ?**

- A PPI
- B BBI
- C CCI
- D DDB

**Answer: C**

### Explanation:

Expression = PNS : OOT

The pattern followed is :

P	N	S
(-1)	(+1)	(+1)
O	O	T

Similarly, for DBH :

D	B	H
(-1)	(+1)	(+1)
C	C	I

=> Ans - (C)

#### Question 4

91 : ? :: 64 : 54

A 63

B 101

C 32

D 70

Answer: A

#### Explanation:

Expression = 91 : ? :: 64 : 54

$$9 + 1 = 10$$

Similarly,  $6 + 4 = 10$

$$\text{So, } 5 + 4 = 9$$

Hence '?' should be some number whose sum of digits is 9.

Among the options, sum of digits of **63** =  $6 + 3 = 9$

=> Ans - (A)

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#### Question 5

$\frac{2}{3} : \frac{19}{29} :: \frac{8}{7} : ?$

A 89/79

B 79/79

C 79/69

D 80/70

Answer: C

#### Explanation:

Expression =  $\frac{2}{3} : \frac{19}{29} :: \frac{8}{7} : ?$

The pattern followed is =  $\frac{a}{b} : \frac{10a-1}{10b-1}$

$$\text{Eg} = \frac{2}{3} : \frac{10(2)-1}{10(3)-1} = \frac{19}{29}$$

Similarly,  $\frac{8}{7} : \frac{10(8)-1}{10(7)-1} = \frac{79}{69}$

=> Ans - (C)

### Question 6

Sepal : Flower ::

- A Foot : Ball
- B Tyre : Bicycle
- C Puppy : Dog
- D Sandals : Shoes

**Answer: B**

### Explanation:

Sepal is a part of a flower, the same way a tyre is a part of a bicycle.

=> Ans - (B)

### Instructions

In each of the following questions, find the odd number/letters/number pair from the given alternatives.

### Question 7

- A Screw driver
- B Spanner
- C Plier
- D Knife

**Answer: D**

### Explanation:

Apart from knife, all the objects are used in hardware shops.

=> Ans - (D)

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### Question 8

- A HCBG
- B LPOK
- C FMEL
- D RJIQ

**Answer: C**

### Explanation:

The pattern is that if the third and fourth letters and last and first letters are taken in that order, they are successive alphabets.

(A) : BC , GH

(B) : OP , KL

(C) : EM , LF (not consecutive alphabets)

(D) : IJ , QR

=> Ans - (C)

**Question 9**

**A** AZBY

**B** CXDW

**C** EVFU

**D** TGSH

**Answer: D**

**Explanation:**

If we combine the first and third letters and fourth and second letters in that order, they form consecutive alphabets in English alphabetical series.

(A) : AB , YZ

(B) : CD , WX

(C) : EF , UV

(D) : TS , HG (in reverse order)

=> Ans - (D)

**Question 10**

**A** 101

**B** 212

**C** 326

**D** 111

**Answer: A**

**Explanation:**

Among the given numbers, only 101 is a prime number, hence it is the odd one out.

=> Ans - (A)

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**Question 11**

**A** 12- 144

**B** 13- 156

**C** 15 - 180

**D** 16 - 176

**Answer: D**

**Explanation:**

The ratio of each term :

(A) :  $\frac{144}{12} = 12$

(B) :  $\frac{156}{13} = 12$

...

(C):  $\frac{180}{15} = 12$

(D):  $\frac{176}{16} = 11$

=> Ans - (D)

**Question 12**

- A Paris
- B Athens
- C London
- D New York

**Answer:** D

**Explanation:**

Paris is the capital of France, Athens of Greece and London is capital of England. But New York is not a capital city, hence it is the odd one.

=> Ans - (D)

**Instructions**

For the following questions answer them individually

**Question 13**

Which one of following responses would be a meaningful order of the following ?

1. Chapter
2. Index
3. Bibliography
4. Introduction
5. Preface

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

**Answer:** C

**Explanation:**

The correct order in a book is :

= Preface -> Index -> Introduction -> Chapter -> Bibliography

≡ 5, 2, 4, 1, 3

=> Ans - (C)

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**Question 14**

Arrange the following words as per order in the dictionary:

1. Recollect
2. Remember
3. Report
4. Repeat
5. Repeal

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

**Answer:** D

**Explanation:**

As per order in the dictionary :

= Recollect -> Remember -> Repeal -> Repeat -> Report

≡ 1, 2, 5, 4, 3

=> Ans - (D)

**Instructions**

In each of the following questions, a series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

**Question 15**

TMJ, QNL, NON, KPP, \_\_\_?

- A JQR
- B HQR
- C HQQ
- D IQS

**Answer:** B

**Explanation:**

here the given sequence is TMJ, QNL, NON, KPP, \_\_\_?

first term of every sequence is retracement of two alphabets starting from T and hence the first term of missing sequence is H

2nd term of every sequence is consecutive alphabets starting from M and hence the 2nd term of missing sequence is Q

3rd term of every sequence is alternative alphabets starting from J and hence last term of missing sequence is R

hence the missing sequence is HQR

**Question 16**

A, CD, GHI, ?, UVWXYZ

- A LMNP
- B MNOL
- C NOPL
- D MNOP

**Answer:** D

**Explanation:**

here the given series is A, CD, GHI, ?, UVWXYZ

here the pattern is that 1st term is A and then a single alphabet is missed and next two alphabets are written after that next two alphabets are missed and next three alphabets are written and so in next case for missing term 3 next terms will be missed i.e. JKL will

be missed and next 4 terms will be written i.e MNOP and hence the missing term is **MNOP**

## SSC CGL Important Questions PDF

### Instructions

In each of the following questions, find out the wrong number in the series.

#### Question 17

27, 81, 1331, 125

- A 125
- B 27
- C 1331
- D 81

**Answer: D**

#### Explanation:

here we need to find the odd one out in 27, 81, 1331, 125

as we know

$$27 = 3^3$$

$$81 = 3^4$$

$$1331 = 11^3$$

$$125 = 5^3$$

here we can clearly see that 81 is the only number which is not a perfect cube and hence 81 is the odd one out

#### Question 18

17, 23, 31, 41, 53, 69

- A 23
- B 31
- C 41
- D 69

**Answer: D**

#### Explanation:

here we need to find the odd one out in 17, 23, 31, 41, 53, 69

as we can see that

$$23 - 17 = 6$$

$$31 - 23 = 8$$

$$41 - 31 = 10$$

$$53 - 41 = 12$$

$$69 - 53 = 16$$

here we can see that difference between consecutive terms is increasing by 2 every single time but in last case the difference increased by 4 and hence 69 is the odd one out .

### Instructions

For the following questions answer them individually



**Question 19**

The ratio of the number of girls to the number of boys in a town is 90%. If the total number of boys and girls in the town is 190, how many girls are in the town?

- A 100
- B 110
- C 90
- D 80

**Answer:** C

**Explanation:**

Let no. of girls in the town be 'x'.

Let no. of boys in the town be 'y'.

According to question,

$$\frac{x}{y} = 0.9.$$

$$x + y = 190.$$

Solving above 2 equations,

We get,  $x = 90$ ,  $y = 100$ .

Therefore no. of girls in the town = 90.

Hence, Option C is correct.

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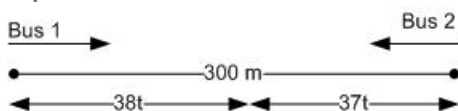
**Question 20**

Two buses start at the same time from Delhi and Agra, which are 300 km. apart, towards each other. After what time will they cross each other if their speeds are 38 km per hour and 37 km per hour ?

- A 4 hours
- B 3 hours
- C 5 hours
- D 6 hours

**Answer:** A

**Explanation:**



Let 't' be the time taken by buses to meet.

Distance travelled by 'Bus 1' =  $38t$  Km.

Distance travelled by 'Bus 2' =  $37t$  Km.

∵ buses are travelling towards each other,

$$\therefore 37t + 38t = 300.$$

$$75t = 300.$$

$$t = 4 \text{ hr.}$$

Hence, Option A is correct.

**Question 21**

A card-board box contains 12 pairs each of three different types of hand gloves used by batsman in Cricket. They are separated into single units of gloves and all mixed. You cannot see the gloves from outside, but you can put your hands through the pigeon hole and take out one glove at a time. What will be the minimum number of gloves one should take out to get one perfect pair of gloves to be sure?

- A 3
- B 13
- C 25
- D 37

**Answer: B**

**Explanation:**

The first 12 draws could be one from each of the pairs.

The 13th glove needs to match one of the 12 as You already have take out 13 gloves to be sure of a pair.

Therefore,Option B is correct.

**Instructions**

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

**Question 22**

**PROVINCIALISM**

- A SAILOR
- B NAIL
- C MAN
- D INITIAL

**Answer: D**

**Explanation:**

The word PROVINCIALISM does not contain any 'I', and thus the word 'Initial' cannot be formed.

=> Ans - (D)

**General Science Notes for SSC CGL**

**Question 23**

**DEPARTMENT**

- A ENTER
- B PARENT
- C TEMPER
- D PARADE

**Answer: D**

**Explanation:**

The word DEPARTMENT does not contain 2 A's, thus the word 'Parade' cannot be formed.

=> Ans - (D)

**Question 24**

**UNCONTAMINATED**

- A MINE
- B NATION
- C CONNOTE
- D TANDEM

**Answer: C**

**Explanation:**

The word UNCONTAMINATED does not contain 2 O's, thus the word 'Connote' cannot be formed.

=> Ans - (C)

**Instructions**

For the following questions answer them individually

**Question 25**

In a certain language PROSE is coded as PPOQE. How will LIGHT be coded ?

- A LIGFT
- B LGGHT
- C LLGFE
- D LGGFT

**Answer: D**

**Explanation:**

Given : PROSE is coded as PPOQE

The pattern followed is that the letters at odd position are written as it is, while there is a difference of 2 letters in the alphabets at even position.

Letters at odd position = POE : POE

Letters at even position = RS (-2 letters) : PQ

Similarly, for 'LIGHT', letters at odd position i.e., LGT will be written as it is and 'IH' will change to 'GF'.

Thus, LIGHT : LGGFT

=> Ans - (D)

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**Question 26**

If 'Development' is written as Tnemdevelop' then 'Evaluation' will be written as

- A Notiaevalu
- B Noitaulave

C Notievalua

D Noitevalua

**Answer: D**

**Explanation:**

Given : 'Development' is written as Tnemdevelop'

The last 4 letters of the given word are taken as the first 4 letters in the code in reverse order, and the rest of the letters are written as it is in the end.

Similarly, for EVALUATION, last 4 letters 'TION' will change to 'NOIT'

Thus, Evaluation : Noitevalua

=> Ans - (D)

**Question 27**

If H = 8 and HAT = 29, find how much BOX = ?

A 46

B 43

C 42

D 41

**Answer: D**

**Explanation:**

The number is the sum of the place values of the alphabets.

H = 8

HAT = 8 + 1 + 20 = 29

=> BOX = 2 + 15 + 24 = 41

=> Ans - (D)

**Question 28**

Which of the following interchange of signs would make the given equation correct?

$64 - 8 \times 9 \times 8 = 64$

A + and -

B  $\div$  and  $\times$

C - and  $\times$

D None of these

**Answer: D**

**Explanation:**

The first two options contain the signs which are not present in the given equation.

Equation :  $64 - 8 \times 9 \times 8 = 64$

(D) :  $64 \times 8 - 9 - 8 = 64$

L.H.S. =  $512 - 17 = 495 \neq$  R.H.S.

=> Ans - (D)

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### Question 29

If + stands for division; x stands for addition; - stands for multiplication; ÷ stands for subtraction, which of the following is correct ?

- (a)  $15 \div 5 \times 2 - 6 + 3 = 28$
- (b)  $15 \times 5 + 2 - 6 \div 3 = 56.5$
- (c)  $15 + 5 - 2 \div 6 \times 3 = 3$
- (d)  $15 - 5 + 2 \times 6 \div 3 = 41$

A c

B a

C b

D d

Answer: A

#### Explanation:

$$(a) : 15 \div 5 \times 2 - 6 + 3 = 28$$

$$\equiv 15 - 5 + 2 \times 6 \div 3 = 28$$

$$\text{L.H.S.} = 10 + 4 = 14 \neq \text{R.H.S.}$$

$$(b) : 15 \times 5 + 2 - 6 \div 3 = 56.5$$

$$\equiv 15 + 5 \div 2 \times 6 - 3 = 56.5$$

$$\text{L.H.S.} = 15 + 15 - 3 = 27 \neq \text{R.H.S.}$$

$$(c) : 15 + 5 - 2 \div 6 \times 3 = 3$$

$$\equiv 15 \div 5 \times 2 - 6 + 3 = 3$$

$$\text{L.H.S.} = 6 - 6 + 3 = 3 = \text{R.H.S.}$$

=> Ans - (A) : c

### Question 30

Some equations have been solved on the basis of a certain operation. Find the correct answer for the unsolved equation on that basis. If  $73 * 17 = 45$  and  $68 * 40 = 54$ . then  $83 * 15 = ?$

A 49

B 64

C 69

D 79

Answer: A

#### Explanation:

Both the numbers are added and the sum is divided by 2

$$\text{Eg : } \frac{73+17}{2} = \frac{90}{2} = 45$$

$$\text{and } \frac{68+40}{2} = \frac{108}{2} = 54$$

$$\text{Similarly, } \frac{83+15}{2} = \frac{98}{2} = 49$$

=> Ans - (A)

**Question 31**

If  $7 \times 8 = 49$ ,  $4 \times 4 = 12$  and  $6 \times 4 = 18$ , what will  $9 \times 6$  be ?

- A 54
- B 50
- C 45
- D None of the above

**Answer:** C

**Explanation:**

The pattern followed is  $a \times b = a \times (b - 1)$

Eg:  $7 \times (8 - 1) = 7 \times 7 = 49$

and  $4 \times (4 - 1) = 4 \times 3 = 12$

and  $6 \times (4 - 1) = 6 \times 3 = 18$

Similarly,  $9 \times (6 - 1) = 9 \times 5 = 45$

=> Ans - (C)

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**Instructions**

In each of the following questions, select the missing number from the given responses.

**Question 32**

6	8	7
36	64	49
24	48	35
18	24	?

- A 17
- B 18
- C 19
- D 21

**Answer:** D

**Explanation:**

6	8	7
36	64	49
24	48	35
18	24	?

let the missing term be y

here terms in last row of every column is 3rd multiple of every term in 1st row of every corresponding column

$18 = 6 \times 3$

$24 = 8 \times 3$

and hence

$y = 7 \times 3 = 21$

**Question 33**

5	2	3
3	6	5
4	7	2
60	84	?

A 10

B 25

C 30

D 40

**Answer: C**

**Explanation:**

5	2	3
3	6	5
4	7	2
60	84	?

Here we can see in 1st and 2nd column that term in last rows are multiple of terms in other rows , i.e

In column 1,  $60 = 5 \times 3 \times 4$

In column 2,  $84 = 2 \times 6 \times 7$

So this pattern will follow in 3rd column and hence the missing term =  $3 \times 5 \times 2 = 30$

**Question 34**

14	10	22
2	3	4
7	3	11
4	10	?

A 2

B 4

C 6

D 8

**Answer: D**

Explanation:

14	10	22
2	3	4
7	3	11
4	10	?

let the missing term be y

as we can see that in 1st and 2nd column

product of 1st two elements = product of last two elements

$14 \times 2 = 7 \times 4$  (in 1st column)

and,  $10 \times 3 = 3 \times 10$  (in 2nd column)

so in 3rd column it will also follow

and hence,  $22 \times 4 = 11 \times y$

$y = 8$

## Daily Free SSC Practice Set

### Instructions

For the following questions answer them individually

### Question 35

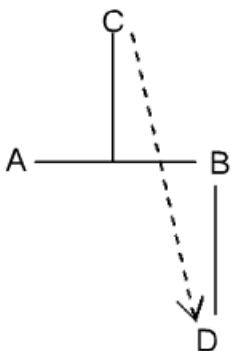
A is located to the West of B. C is located at North in between A and B. D is exactly to the South of B and also in line with B. In which direction of C is D located?

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

Answer: B

### Explanation:

Location of A,B,C and D can be shown as :



Hence, D is South-East of C.

=> Ans - (B)

### Question 36

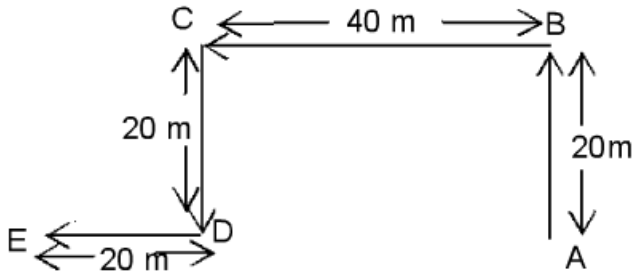
Deepak walks 20 metres towards North. He then turns left and walks 40 metres. He again turns left and walks 20 metres. Further he moves 20 metres after turning to the right. How far is he from his original position ?



- A 20 mts.
- B 60 mts.
- C 50 mts.
- D 30 mts.

**Answer: B**

**Explanation:**



Let Deepak started from point A and travelled north for 20 m to reach B, then he turned left and walked 40 m to reach C, again he turned left and walked 20 m till he reached D, finally he turned right and stopped at point E after walking 20 m.

Thus,  $AE = 40 + 20 = 60$  m

=> Ans - (B)

**Instructions**

In each of the following questions, two statements are given followed by conclusions / inferences. You have to consider the statement to be true, even if it seems to be at variance from commonly known facts. You are to decide which of the given conclusions / inferences can definitely be drawn from the given statement. Indicate your answer,

**Question 37**

**Statements :**

- (I) Some students are intelligent.
- (II) Ankita is a student.

**Conclusions :**

- 1. Some students are dull.
- 2. Ankita is an intelligent.

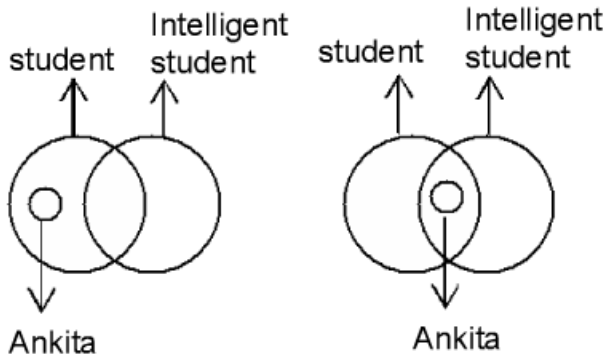
- A Only 1 follows
- B Only 1 and 2 follow
- C Only 2 follows
- D None follows

**Answer: D**

**Explanation:**

In the above statements, there is no information about the dull students, hence conclusion I does not follow.

For the second conclusion, there are two possibilities :



Thus, Ankita may or may not be intelligent, hence conclusion II does not follow.

Thus, none follows.

=> Ans - (D)

## SSC CGL Free Online Coaching

### Question 38

#### Statements :

- (I) All the watches sold in that shop are made of white metal.
- (II) Some of Rico watches are sold in that shop.

#### Inferences :

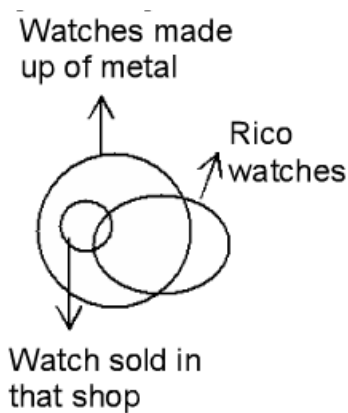
1. All watches of white metals are manufactured by Rico.
2. Some of Rico watches are of white metal.
3. None of Rico watches are of white metal.
4. Some of Rico watches of white metal are sold in that shop.

- A 1 and 2 inferences only
- B 2 and 4 inferences only
- C 1 and 3 inferences only
- D 1 and 4 inferences only

Answer: B

#### Explanation:

The venn diagram for above statements is :



#### Inferences :

1. All watches of white metals are manufactured by Rico = false
2. Some of Rico watches are of white metal = true
3. None of Rico watches are of white metal = false
4. Some of Rico watches of white metal are sold in that shop = true

Thus, only inferences 2 and 4 follows.

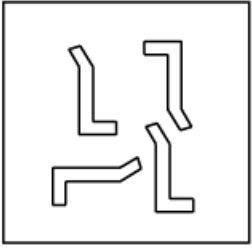
=> Ans - (B)

**Instructions**

For the following questions answer them individually

**Question 39**

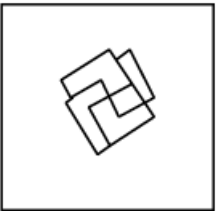
Identify the Answer Figure from which the pieces given in the Question Figure have been cut.



A



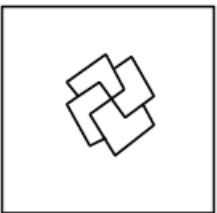
B



C



D



Answer: A

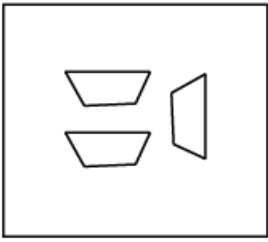
**Explanation:**

It can be seen that question figures are part of figure in option A.

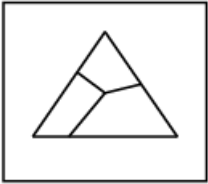
**Instructions**

Which among the answer figures can be constructed from the parts given in question figure ?

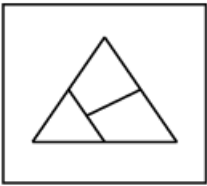
Question 40



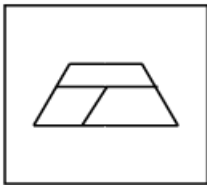
A



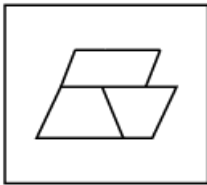
B



C



D



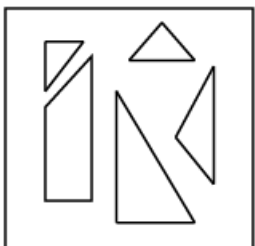
Answer: A

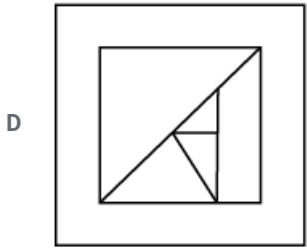
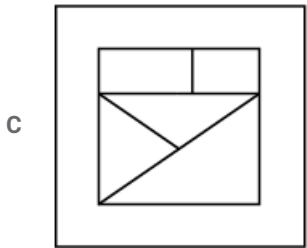
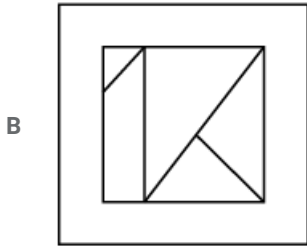
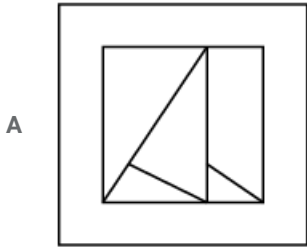
Explanation:

There are 3 trapeziums present in question figure which are only present in option A.

[SSC CHSL Previous Question papers \(download pdf\)](#)

Question 41





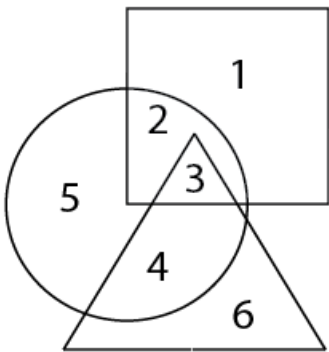
Answer: B

**Explanation:**

It can be seen that the figure in option B can be constructed using the parts given in question.

**Question 42**

Which of the following number is present only in the circle and the triangle ?



A 5

B 3

C 4

D 6

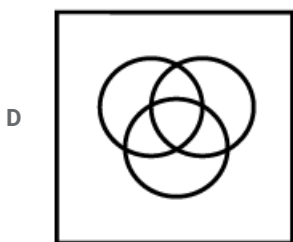
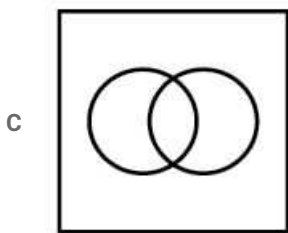
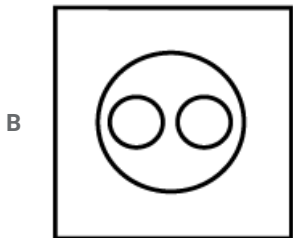
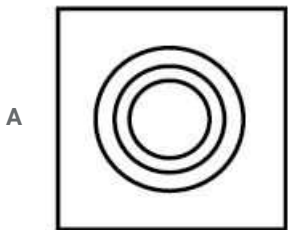
Answer: C

**Explanation:**

We need to find intersection of circle and triangle (but not with the square). This is represented by area 4.

**Question 43**

Which one of the following diagrams represents the correct relationship among society, teacher and student ?



Answer: B

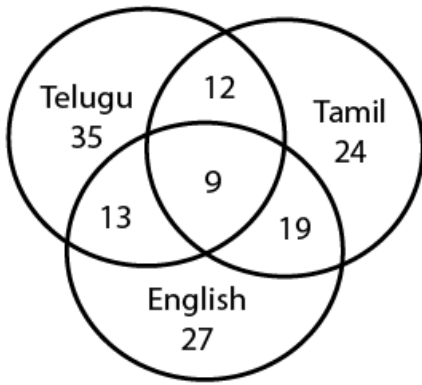
**Explanation:**

Society is a super set of teachers and students. Also there are no common entities between teachers and students. This is best represented by option B.

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Question 44

Find out the number of all those people who can speak Tamil or Telugu ?



- A 3
- B 59
- C 21
- D 112

Answer: D

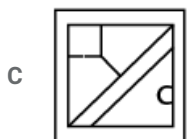
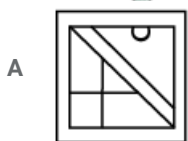
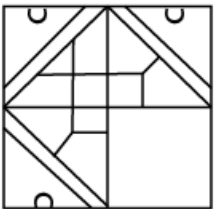
Explanation:

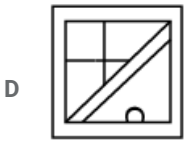
All those people who can speak Tamil or telugu =  $35+13+12+9+24+19 = 112$

Instructions

In each of the following questions, which answer figure will complete the pattern in the question figure ?

Question 45



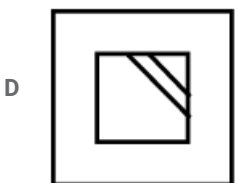
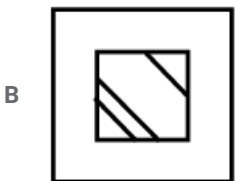
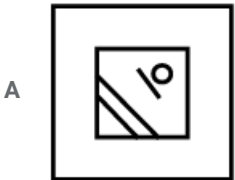
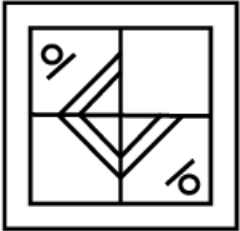


Answer: D

**Explanation:**

The reflection of first quadrant is given by option D.

**Question 46**



Answer: C

**Explanation:**

The reflection of fourth quadrant is given by option C.

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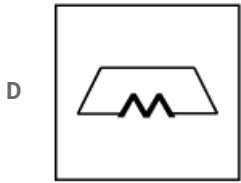
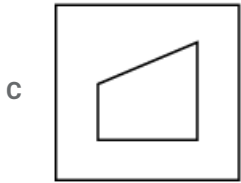
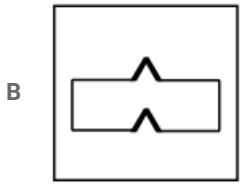
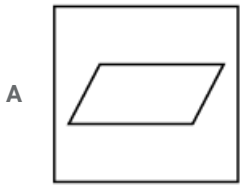
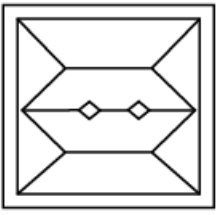
**Instructions**

For the following questions answer them individually



Question 47

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



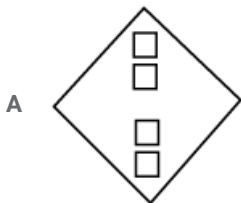
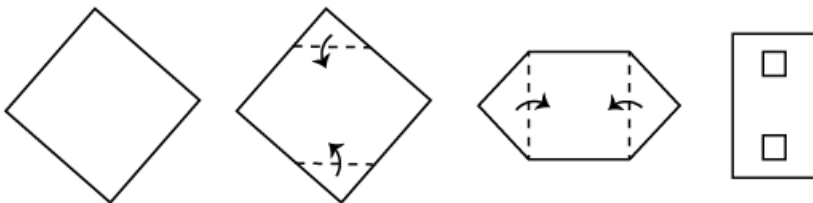
Answer: D

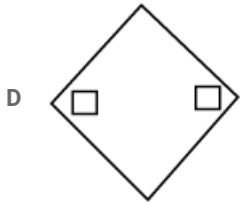
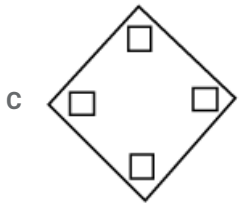
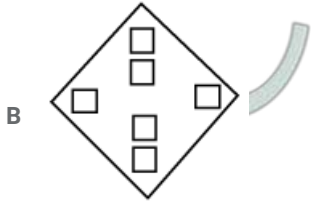
Explanation:

We can see that the figure in option D is hidden in the question figure.

Question 48

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





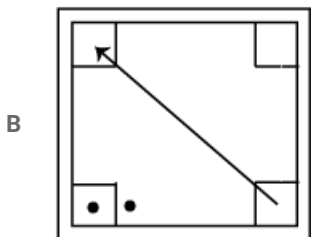
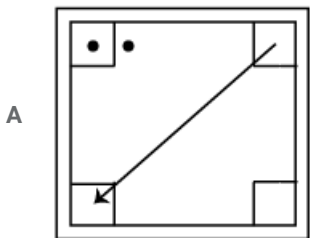
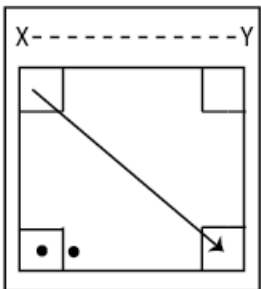
Answer: A

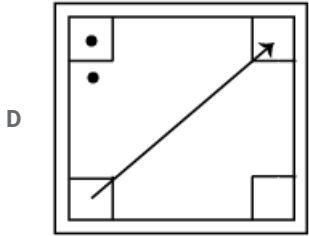
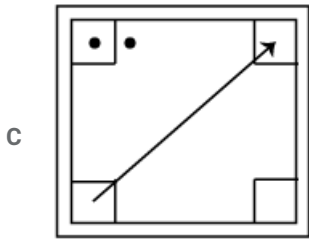
Explanation:

When opened back, there will be 4 square holes as shown in option A.

Question 49

Which of the answer figure is exactly mirror image of the given figure when the mirror is held at XY ?





Answer: C

Explanation:

The 180 degree rotation of question figure about line Xy is given by option C.

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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 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 11, 25, etc., and 'J' can be represented by 67, 78, etc. Similarly, you have to identify the set for the given word.

"MILK"

MATRIX I

0	1	2	3	4	5
1	D	E	F	G	H
2	H	G	E	F	D
3	G	F	E	D	H
4	F	E	D	H	G
5	E	D	H	F	G

MATRIX II

0	6	7	8	9	10
6	I	J	K	L	M
7	M	L	J	K	I
8	I	K	L	J	M
9	J	L	M	K	I
10	K	M	I	L	J

A 98, 66, 79, 77

B 98, 79, 77, 86

C 98, 86, 77, 99

D 86, 77, 99, 98

**Answer:** C

**Explanation:**

M can be represented as 98

I can be represented as 86

L can be represented as 77

K can be represented as 99

Hence,option C

## SSC CGL Free Mock Test

### General Awareness

**Instructions**

For the following questions answer them individually

**Question 51**

**If the average revenue is a horizontal straight line, marginal revenue will be**

- A U shaped
- B Kinked
- C Identical with average revenue
- D L shaped

**Answer:** C

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**Question 52**

**The hypothesis that rapid growth of per capita income will be associated with a reduction in poverty is called**

- A trickle down Hypothesis
- B trickle up hypothesis
- C U shaped hypothesis
- D poverty estimation hypothesis

**Answer:** A

**Question 53**

**According to Keynes, business cycles are due to variation in the rate of investment caused by fluctuations , in the**

- A Marginal efficiency of capital
- B Marginal propensity to save
- C Marginal propensity to consumption
- D Marginal efficiency to investment

**Answer:** A

**Question 54**

The main emphasis of Keynesian economics is on

- A Expenditure
- B Exchange
- C Foreign trade
- D Taxation

**Answer: A**

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**Question 55**

The main feature of the Federal State is

- A Decentralisation
- B Centralisation
- C Theory of separation of powers
- D Sovereignty

**Answer: A**

**Question 56**

Public opinion is

- A The opinion of the majority
- B The opinion of the people on political matters
- C Opinion of the citizens of the country
- D The opinion based on reasoning which is for the welfare of the whole society

**Answer: A**

**Question 57**

In India the largest single item of current government expenditure is

- A Defence Expenditure
- B Interest payment of debt
- C Payment of subsidies
- D Investment in social overheads

**Answer: B**

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**Question 58**

The demand of a factor of production is

- A direct
- B derived
- C neutral
- D discretion of the producer

**Answer: B**

**Question 59**

The first woman to preside over the UN General Assembly:

- A Rajkumari Amrit Kaur
- B Vijaylakshmi Pandit
- C Karnla Nehru
- D Indira Gandhi

**Answer: B**

**Question 60**

Pancha siddhantarn of Varaha mihira deals with

- A Astrology
- B Astronomy
- C Medicine
- D Anatomy

**Answer: B**

## SSC CGL Tier-2 Previous Papers PDF

**Question 61**

Which one of the following coins was issued in silver during the Gupta period ?

- A Kakini
- B Nishka
- C Rupyaka
- D Dinar

**Answer: C**

**Question 62**

Lothal, the dockyard site of the Indus Valley Civilization, is situated in

- A Gujarat
- B Punjab
- C Pakistan
- D Haryana

**Answer: A**

**Question 63**

**Who was the Delhi Sultan who died of a sudden fall from a horse at Lahore while playing Chaugan ?**

- A Qutbuddin Aibak
- B Iltutmish
- C Balban
- D Jalaluddin Khilji

**Answer: A**

## SSC CGL Important Questions PDF

**Question 64**

**Buddha means**

- A Great Conqueror
- B Great Saint
- C Wise one
- D Enlightened one

**Answer: D**

**Question 65**

**Which one of the following is an item included in the list of Fundamental Duties of an Indian citizen in the Constitution ?**

- A To practice secularism.
- B To develop scientific temper, humanism and the spirit of enquiry and reform.
- C To pay all taxes to government regularly and correctly.
- D Not to assault any public servant in the (during) performance of his duties.

**Answer: B**

**Question 66**

**Where is the headquarters of Hindustan Zinc Ltd ?**

- A Udaipur

- B Jodhpur
- C Jaisalmer
- D Jaipur

Answer: A

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### Question 67

Leaving agricultural land uncultivated for some years known as

- A Intensive farming
- B Fallowing
- C Shifting cultivation
- D Subsistence fanning

Answer: B

### Question 68

The sky appears blue due to

- A Rayleigh scattering
- B Mie scattering
- C Back scattering
- D None of the above

Answer: A

### Question 69

The mountain formed on the earth crust due to tension is called

- A Young folded mountain
- B Old folded mountain
- C Laccolith mountain
- D Block mountain

Answer: D

## General Science Notes for SSC CGL

### Question 70

Movement of hairs in Drosera is referred to as

- A Heliotropism



- B Thigmotropism
- C Photonastic
- D Seismonastic

Answer: B

**Question 71**

Which of the following is an example of parasitic alga ?

- A Ulothrix
- B Cephaleuros
- C Oedogonium
- D Sargassum

Answer: B

**Question 72**

Solitary cyranose inflorescence is observed in

- A Rose
- B Chinarose
- C Tuberose
- D Gardenia

Answer: D

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**Question 73**

The excretory aperture in Paramoecium is known as

- A Cytopharynx
- B Cytostome
- C Cytopyge
- D Cryptospere

Answer: C

**Question 74**

IVF (In Vitro Fertilization) Technique was first devised by

- A Patrick Steptoe and Robert Edwards
- B Dr. Henry Dixon
- C Robertson

D Dr. Martin Cooper

Answer: A

Question 75

What is 'Biodiversity' ?

- A Many types of flora & fauna in one forest
- B Many types of flora and fauna in many forests
- C Many population of one species in one forest
- D All the above are true.

Answer: A

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Question 76

A particle is moving in a uniform circular motion with constant speed  $v$  along a circle of radius  $r$ . The acceleration-of the particle is

- A zero
- B  $v / r$
- C  $v / r^2$
- D  $v^2 / r$

Answer: C

Question 77

Which of the following devices can be used to detect radiant heat ?

- A Liquid thermometer
- B Six's maximum and minimum thermometer
- C Constant volume air ther - mometer
- D Thermopile

Answer: D

Question 78

In which one of the following the phenomenon of total internal reflection of light is used ?

- A Formation of mirage
- B Working of binoculars
- C Formation of rainbow
- D Twinkling of stars

Answer: C

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Question 79

Period of oscillation of 3 cm microwaves in seconds is

- A  $1 \times 10^{10}$
- B  $1 \times 10^{-10}$
- C 0.01
- D 0.001

Answer: B

Question 80

The most advanced form Of Read Only Memory (ROM) is

- A PROM
- B RAM
- C Cache Memory
- D EEPROM

Answer: D

Question 81

A computer program that translates one program instruction one at a time into machine language is called a/ an

- A Interpreter
- B Compiler
- C Simulator
- D Commander

Answer: A

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Question 82

Which of the following is very reactive and kept in kerosene?

- A Sodium
- B Potassium
- C Iodine
- D Bromine

Answer: A

**Question 83**

**Just born baby has the respiratory rate as**

- A 32 times/minute
- B 26 times/minute
- C 18 times/minute
- D 15 times/minute

**Answer: A**

**Question 84**

**In the periodic table of elements, on moving from left to right across a period, what happens to the atomic radius?**

- A decreases
- B increases
- C remains unchanged
- D does not follow a definite pattern

**Answer: A**

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**Question 85**

**Vulcanized rubber contains sulphur**

- A 2%
- B 3-5%
- C 7-9%
- D 10-15%

**Answer: B**

**Question 86**

**Uric acid is the chief nitrogenous wastes in**

- A Frogs
- B Birds
- C Fishes
- D Mankind

**Answer: B**

**Question 87**

**To conserve coral reefs, the Government of India declared one of the following as Marine Park.**

- A Gulf of Kutch
- B Lakshadweep Islands
- C Gulf of Mannar
- D Andaman Islands

**Answer: A**

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**Question 88**

The special modified epidermal cells surrounding stomatal pore are called

- A Epithelial cells
- B Guard cells
- C Subsidiary cells
- D Accessory cells

**Answer: B**

**Question 89**

Transpiration through leaves is called as

- A Cauline transpiration
- B Foliar transpiration
- C Cuticular transpiration
- D Lenticular transpiration

**Answer: B**

**Question 90**

Who is the brand ambassador of Nokia Phones in India ?

- A Shah Rukh Khan
- B Aamir Khan
- C Abhishek Bachchan
- D M.S. Dhoni

**Answer: A**

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**Question 91**

Which of the following is a metallic ore ?

- A Mica
- B Quartz
- C Feldspar
- D Galena

**Answer: D**

**Question 92**

'Canterbury', the premium Indian brand of woollen cardigans and pullovers is from the house of

- A Monte-Carlo
- B Woodland
- C Digjam
- D OCM

**Answer: A**

**Question 93**

Lionel Messi, the winner of four FIFA Ballion d'or and World Player of the year, belongs to

- A Brazil
- B Spain
- C Argentina
- D Germany

**Answer: C**

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**Question 94**

Who is the brand ambassador of the Hockey India League (HIL) 2013 ?

- A Pargat Singh
- B Dhanraj Pillai
- C Navjot Singh Siddhu
- D Virat Kohli

**Answer: C**

**Question 95**

"Consumer Electronic Imaging' Fair 2013", formally called as "Photo Fair", will be organize in January 2015 at

- A Kolkata
- B Chennai

C Delhi

D Mumbai

**Answer: C**

**Question 96**

**Which Indian State is the leading cotton producer ?**

A Gujarat

B Maharashtra

C Andhra Pradesh

D Madhya Pradesh

**Answer: A**

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**Question 97**

**The 'more mega store' retail chain belongs to which Indian Industry ?**

A Reliance Industry

B Bharti Enterprises

C Aditya Birla Group

D None of these

**Answer: C**

**Question 98**

**Who among the following was responsible for the revival of Hinduism in 19th century?**

A Swami Dayanand

B Swami Vivekanand

C Guru Shankaracharya

D Raja Ram Mohan Roy

**Answer: B**

**Question 99**

**The Nobel Peace Prize is awarded in which city ?**

A Brussels

B Geneva

C Oslo

D Stocklm

**Answer: C**

## SSC CGL Free Mock Test

### Question 100

Where is the headquarters of the International Olympic Committee located ?

- A Italy
- B Switzerland
- C Belgium
- D France

Answer: B

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### Quant

#### Instructions

For the following questions answer them individually

### Question 101

For any integral value of  $n$ ,  $3^{2n} + 9n + 5$  when divided by 3 will leave the remainder.

- A 1
- B 2
- C 0
- D 5

Answer: B

#### Explanation:

Expression =  $3^{2n} + 9n + 5$

=  $3^{2n} + 9n + 3 + 2$

Taking 3 common from each term, we get :

=>  $3(3^{2n-1} + 3n + 1) + 2$

Now, if we divide the above term by 3, remainder will be 2.

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### Question 102

Three men A, B and C working together can do a job in 6 hours less time than A alone, in 1 hour less time than B alone and in one half the time needed by C when working alone. Then A and B together can do the Job in

- A  $2/3$  hour
- B  $3/4$  hour
- C  $3/2$  hour



D  $\frac{4}{3}$  hour

**Answer: D**

**Explanation:**

Let time taken by A alone =  $x$  hours

=> Time taken by A, B & C together =  $(x - 6)$  hours

=> Time taken by B alone =  $(x - 5)$  hours

=> Time taken by C alone =  $2(x - 6)$  hours

Now, rate of work of A + rate of work of B + rate of work of C = rate of work of A,B,C together

$$\Rightarrow \frac{1}{x} + \frac{1}{x-5} + \frac{1}{2(x-6)} = \frac{1}{x-6}$$

On solving above equation, we get  $x = 3, \frac{40}{6}$

When  $x = 3$ , the expression  $(x - 6)$  becomes negative, thus it's not possible.

$$\Rightarrow x = \frac{40}{6}$$

Time taken by A & B together =  $\frac{\frac{40}{6} - 5}{\frac{40}{6} + 5}$

$$= \frac{4}{3} \text{ hours}$$

**Question 103**

A swimming pool is fitted with three pipes. The first two pipes working simultaneously, fill the pool in the same time as the third pipe alone. The second pipe alone fills the pool 5 hours faster than the first pipe and 4 hours slower than the third pipe. In what time will the second and third pipes together fill the pool?

A 3 hours

B 3.75 hours

C 4 hours

D 4.75 hours

**Answer: B**

**Explanation:**

Let the first pipe alone can fill the tank in  $x$  hours

=> Second pipe can fill the tank in  $(x - 5)$  hours

and the third pipe can fill the tank in  $(x - 5) - 4 = (x - 9)$  hours

Since, part filled by first pipe and second pipe together in 1 hr = part filled by third pipe in 1 hr

$$\Rightarrow \frac{1}{x} + \frac{1}{x-5} = \frac{1}{x-9}$$

$$\Rightarrow (x - 5)(x - 9) + x(x - 9) = x(x - 5)$$

$$\Rightarrow x^2 - 18x + 45 = 0$$

$$\Rightarrow x = 15, 3$$

When  $x = 3$ , the expression,  $(x - 5)$  will be negative, thus it's not possible.

$$\Rightarrow x = 15$$

Time taken by second and third pipes to fill the tank =  $\frac{1}{\frac{1}{10} + \frac{1}{6}}$

$$= \frac{60}{16} = 3.75 \text{ hours}$$

Question 104

Arranging the following in descending order, we get

$$\sqrt[3]{4}, \sqrt{2}, \sqrt[6]{3}, \sqrt[4]{5}$$

A  $\sqrt[3]{4} > \sqrt[4]{5} > \sqrt{2} > \sqrt[6]{3}$

B  $\sqrt[4]{5} < \sqrt[3]{4} > \sqrt[6]{3} > \sqrt{2}$

C  $\sqrt{2} > \sqrt[6]{3} > \sqrt[3]{4} > \sqrt[4]{5}$

D  $\sqrt[6]{3} > \sqrt[4]{5} > \sqrt[3]{4} > \sqrt{2}$

Answer: A

Explanation:

Expression :  $\sqrt[3]{4}, \sqrt{2}, \sqrt[6]{3}, \sqrt[4]{5}$

$$= 4^{\frac{1}{3}}, 2^{\frac{1}{2}}, 3^{\frac{1}{6}}, 5^{\frac{1}{4}}$$

Now, L.C.M. of the powers i.e. 3,2,4,6 = 12

Multiplying the powers by 12 in each of the numbers, we get :

$$= 4^4, 2^6, 3^2, 5^3$$

$$= 256, 64, 9, 125$$

Now arranging them in descending order,

$$\Rightarrow 256 > 125 > 64 > 9$$

$$\equiv \sqrt[3]{4} > \sqrt[4]{5} > \sqrt{2} > \sqrt[6]{3}$$

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Question 105

The base of a right prism is a quadrilateral ABCD. Given that AB = 9 cm, BC = 14 cm, CD = 13 cm, DA = 12 cm and  $\angle DAB = 90^\circ$ . If the volume of the prism be 2070 cm<sup>3</sup>, then the area of the lateral surface is

A 720 cm<sup>2</sup>

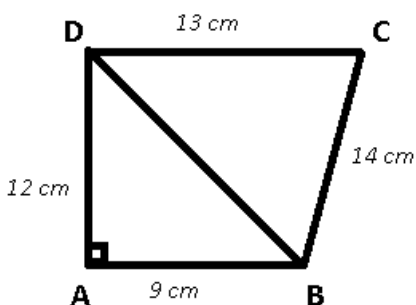
B 810 cm<sup>2</sup>

C 1260 cm<sup>2</sup>

D 2070 cm<sup>2</sup>

Answer: A

Explanation:



In right  $\triangle DAB$ , using Pythagoras theorem,

$$\Rightarrow BD = \sqrt{(AD)^2 + (AB)^2}$$

$$\Rightarrow BD = \sqrt{12^2 + 9^2} = \sqrt{225}$$

$$\Rightarrow BD = 15\text{cm}$$

$$\text{Now, area of } \triangle DAB = \frac{1}{2} * 9 * 12 = 54\text{cm}^2$$

$$\text{Area of } \triangle BCD = \sqrt{s(s-a)(s-b)(s-c)}$$

$$\text{where, } s = \frac{a+b+c}{2}$$

$$\Rightarrow \text{Area of } \triangle BCD = \sqrt{21 * 6 * 7 * 8} = 84\text{cm}^2$$

$$\begin{aligned} \Rightarrow \text{Area of quad ABCD} &= \text{area of } \triangle DAB + \text{area of } \triangle BCD \\ &= 54 + 84 = 138\text{cm}^2 \end{aligned}$$

Volume of prism = base area \* height

$$\Rightarrow 2070 = 138 * \text{height}$$

$$\Rightarrow \text{height} = 15\text{ cm}$$

Lateral surface area of prism = perimeter of base \* height

$$= (12 + 9 + 14 + 13) * 15 = 48 * 15$$

$$= 720\text{ cm}^2$$

#### Question 106

The volumes of a right circular cylinder and a sphere are equal. The radius of the cylinder and the diameter of the sphere are equal. The ratio of height and radius of the cylinder is

A 3 : 1

B 1 : 3

C 6 : 1

D 1 : 6

Answer: D

#### Explanation:

Let the radius and height of right circular cylinder be  $r$  and  $h$  respectively.

Let radius of sphere is  $R$ .

The radius of the cylinder and the diameter of the sphere are equal.

Therefore,  $r = 2R$

The volumes of a right circular cylinder and a sphere are equal.

$$\Rightarrow \pi r^2 h = \frac{4}{3} \pi R^3$$

$$\Rightarrow 3r^2 h = 4 \left(\frac{r}{2}\right)^3$$

$$\Rightarrow 6r^2 h = r^3$$

$$\Rightarrow 6h = r$$

$$\Rightarrow \frac{h}{r} = \frac{1}{6}$$

#### Question 107

A wire of length 44 cm is first bent to form a circle and then rebent to form a square. The difference of the two enclosed areas is

A 44 cm<sup>2</sup>

B 33 cm<sup>2</sup>

C 55 cm<sup>2</sup>

D 66 cm<sup>2</sup>

Answer: B

**Explanation:**

Let radius of circle be  $r$  and side of square be  $a$

=> Circumference of circle =  $2\pi r = 44$

$$\Rightarrow r = 7\text{cm}$$

Since, the circular wire is bent to form square, => both of their perimeters are equal

=> Perimeter of square =  $4a = 44$

$$\Rightarrow a = 11\text{cm}$$

Now, area of circular wire =  $\pi r^2$

$$= \frac{22}{7} * 7^2 = 154\text{cm}^2$$

Area of square =  $a^2$

$$= 11^2 = 121\text{cm}^2$$

$$\Rightarrow \text{Required difference} = 154 - 121 = 33\text{cm}^2$$

## SSC CGL Tier-2 Previous Papers PDF

**Question 108**

A shopkeeper listed the price of goods at 30% above the cost price. He sells half the stock at this price, one fourth of the stock at a discount of 15% and the remaining at 30% discount. His overall profit is

A 15 3/8 %

B 15%

C 15 3/5 %

D 15 2/3 %

Answer: A

**Explanation:**

Let number of items = 4 (for simplicity)

Let C.P. for each =  $100x$

$$\text{Markup} = \frac{30}{100} * 100x = 30x$$

$$\Rightarrow \text{M.P.} = 100x + 30x = 130x$$

For first 2 items, S.P. =  $130x * 2 = 260x$

For the next item, discount = 15% =>  $\frac{15}{100} * 130x = 19.5x$

=> S.P. for the next item =  $130x - 19.5x = 110.5x$

Discount for final item = 30% =>  $\frac{30}{100} * 130x = 39x$

=> S.P. for final item =  $130x - 39x = 91x$

$$\Rightarrow \text{Total S.P. for 4 items} = 260x + 110.5x + 91x = 461.5x$$

and Total C.P. for 4 items =  $4 * 100x = 400x$

$$\Rightarrow \text{Profit} = \frac{461.5x - 400x}{400x} * 100 = \frac{123}{8}$$
$$= 15\frac{3}{8}\%$$

#### Question 109

A takes three times as long as B and C together to do a job. B takes four times as long as A and C together to do the work. If all the three, working together can complete the job in 24 days, then the number of days, A alone will take to finish the job is

- A 100
- B 96
- C 95
- D 90

**Answer: B**

#### Explanation:

Let time taken by B and C =  $x$  days

$\Rightarrow$  Time taken by A =  $3x$  days

Thus, part of work done by A, B & C in 1 day

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

Acc to ques :

$$\Rightarrow \frac{4}{3x} = \frac{1}{24}$$

$$\Rightarrow x = \frac{4 \times 24}{3} = 32 \text{ days}$$

$\Rightarrow$  Time taken by A alone =  $32 \times 3 = 96$  days

#### Question 110

A shopkeeper allows a discount of 10% on the marked price of an item but charges a sales tax of 8% on the discounted price. If the customer pays 3,402 as the price including the sales tax, then the marked price is

- A Rs. 3,400
- B Rs. 3,500
- C Rs. 3,600
- D Rs. 3,800

**Answer: B**

#### Explanation:

Let M.P. =  $100x$

$$\text{Discount \%} = \frac{10}{100} * 100x = 10x$$

$$\Rightarrow \text{S.P.} = 100x - 10x = 90x$$

$$\text{Sales tax on discounted price} = \frac{8}{100} * 90x = 7.2x$$

$$\text{Now, total S.P.} = 90x + 7.2x = 97.2x$$

$$\Rightarrow \$97.2x = 3402$$

$$\Rightarrow x = 35$$

$$\Rightarrow \text{M.P.} = 35 * 100 = 3500$$

## SSC CGL Important Questions PDF

### Question 111

The milk and water in two vessels A and B are in the ratio 4 : 3 and 2 : 3 respectively. In what ratio, the liquids in both the vessels be mixed to obtain a new mixture in vessel C containing half milk and half water ?

- A 7 : 5
- B 5 : 2
- C 3 : 11
- D 1 : 2

**Answer:** A

#### Explanation:

$$\text{Fraction of milk in vessel A} = \frac{4}{7}$$

$$\text{Fraction of milk in vessel B} = \frac{2}{5}$$

$$\text{Fraction of milk in vessel C} = \frac{1}{2}$$

Using, rule of alligation, required ratio =  $x : y$

$$x : y$$

$$= \frac{4}{7} : \frac{2}{5}$$

$$\text{Mean fraction} : \frac{1}{2}$$

$$\Rightarrow \left( \frac{1}{2} - \frac{2}{5} \right) : \left( \frac{4}{7} - \frac{1}{2} \right) \text{ [Using Alligations]}$$

$$\Rightarrow 10 : 14$$

$$\Rightarrow x : y = \frac{1}{10} : \frac{1}{14} = 7 : 5$$

### Question 112

Two numbers A and B are such that the sum of 5% of A and 4% of B is  $\frac{2}{3}$ rd of the sum of 6% of A and 8% of B. The ratio A : B is

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

**Answer:** A

#### Explanation:

it is given that

$$\frac{5}{100} \times A + \frac{4}{100} \times B = \frac{2}{3} \times \left( \frac{6}{100} \times A + \frac{8}{100} \times B \right)$$

$$\frac{A}{100} = \frac{4B}{300}$$

$$\frac{A}{B} = \frac{4}{3}$$

### Question 113

The average marks obtained by 40 students of a class is 86. If the 5 highest marks are removed, the average reduces by one mark. The average marks of the top 5 students is

- A 92
- B 96
- C 93
- D 97

**Answer: C**

**Explanation:**

$$\text{Average} = \frac{\text{Sum of Elements}}{\text{Number of Elements}}$$

Given that average marks of 40 students in a class = 86

Hence total marks of 40 students =  $40 \times 86 = 3440$

Now when the top 5 highest marks are removed than the average reduces by 1 and hence it become =  $86 - 1 = 85$

and number of students now becomes =  $40 - 5 = 35$

So total of remaining students =  $35 \times 85 = 2975$

So total marks of top 5 students =  $3440 - 2975 = 465$

$$\text{average of 5 students} = \frac{465}{5} = 93$$

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**Question 114**

A student finds the average of 10, 2 - digit numbers. If the digits of one of the numbers is interchanged, the average increases by 3.6. The difference between the digits of the 2-digit numbers is

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

**Answer: A**

**Explanation:**

$$\text{average} = \frac{\text{Sum of Elements}}{\text{Number of Elements}}$$

Let the average of 10 two digit number be y

Sum of 10 two digit number =  $10 \times y$

Now if digits of 1 number is interchanged , new average =  $y + 3.6$

This increment is because of change in digits of 1 two digit number .

Sum of 10 numbers after interchanging digits =  $10y + 36$

Difference between the two cases =  $9 \times$  difference between digits of 1 two digit number whose digits have been interchanged and the unit digit of this number is greater than tens digit =  $9(b - a)$

Where " ab " is the two digit number whose digits have been interchanged.

$$9(b - a) = 36$$

$$\text{Hence , } (b - a) = 4$$

Question 115

A trader buys goods at 20% discount on marked price. If he wants to make a profit of 25% after allowing a discount of 20%, by what percent should his marked price be greater than the original marked price ?

- A 15%
- B 65%
- C 25%
- D 20%

Answer: C

Explanation:

Let original M.P. =  $100x$

$$\text{Discounted amount} = \frac{20}{100} * 100x = 20x$$

$$\Rightarrow \text{Amount at which trader buys} = 100x - 20x$$

$$\Rightarrow \text{C.P.} = 80x$$

$$\text{Profit amount} = \frac{25}{100} * 80x = 20x$$

$$\Rightarrow \text{Amount at which trader should sell} = 20x + 80x$$

$$\Rightarrow \text{S.P.} = 100x$$

Let the price at which he marked his price =  $y$

$$\Rightarrow \frac{y-100x}{y} * 100 = 20$$

$$\Rightarrow 4y = 500x \Rightarrow y = 125x$$

$$\begin{aligned} \text{Now, \% by which he should mark up his price more than the original marked price} &= \frac{125x-100x}{100x} * 100 \\ &= 25\% \end{aligned}$$

Question 116

A man spends 75% of his income. His income increases by 20% and his expenditure also increases by 10%. The percentage of increase in his savings is

- A 40%
- B 30%
- C 50%
- D 25%

Answer: C

Explanation:

let the income of person be Rs  $y$

So his expenditure be 75% of income which is =  $0.75y$

$$\text{Saving} = y - 0.75y = 0.25y$$

Now after increment of 20 % in income the new income becomes =  $1.2y$

Given that new expenditure is 10% more than previous one. So, new expenditure is =  $1.1 * 0.75y = 0.825y$

$$\text{New savings} = 1.2y - 0.825y = 0.375y$$

$$\text{Percentage increase in savings} = \frac{0.375y-0.25y}{0.25y} * 100 = 50\%$$



## General Science Notes for SSC CGL

### Question 117

A car travels from P to Q at a constant speed. If its speed were increased by 10 km/h, it would have been taken one hour lesser to cover the distance. It would have taken further 45 minutes lesser if the speed was further increased by 10 km/h. The distance between the two cities is

- A 540 km
- B 420 km
- C 600 km
- D 620 km

**Answer:** B

### Explanation:

Let the distance between the two cities =  $d$  km and the speed be  $s$  km/hr

$$\Rightarrow \text{Time taken to travel} = \frac{d}{s} \text{ hr}$$

Now, in condition 1, the car takes 1 hr lesser when speed is increased by 10 km/h

$$\Rightarrow \frac{d}{s+10} = \frac{d}{s} - 1$$

$$\Rightarrow \frac{d}{s} - \frac{d}{s+10} = 1$$

$$\Rightarrow 10d = s(s+10) \text{-----Eqn(1)}$$

and according to condition 2,

$$\Rightarrow \frac{d}{s+20} = \frac{d}{s} - 1 - \frac{45}{60}$$

$$\Rightarrow \frac{d}{s} - \frac{d}{s+20} = \frac{7}{4}$$

$$\Rightarrow 20d = \frac{7}{4}s(s+20) \text{-----Eqn(2)}$$

Solving eqns (1) & (2), we get

$$s = 60 \text{ km/hr and } d = 420 \text{ km}$$

### Question 118

A train leaves a station A at 7 am and reaches another station B at 11 am. Another train leaves B at 8 am and reaches A at 11.30 am. The two trains cross one another at

- A 8:36 am
- B 8:56 am
- C 9:00 am
- D 9:24 am

**Answer:** D

### Explanation:

Time taken by 1st train to travel from A to B =  $11-7 = 4$  hours

Time taken by 2nd train to travel from B to A =  $11:30-8 = 3.5$  hours

$$\Rightarrow \text{ratio of time taken by 1st train to 2nd train} = 4 : \frac{7}{2} = 8 : 7$$

Since, speed is inversely proportion to time

=> Ratio of speeds of 1st train to 2nd train = 7 : 8

Let the speed of 1st train =  $7x$  and 2nd train =  $8x$  km/hr

Distance between the two stations = time  $\times$  speed =  $7x \times 4 = 28x$  km

We know that, 1st train starts one hour early, thus it will cover  $7x$  distance till the time 2nd train starts.

So, at 8.00 a.m., remaining distance between two trains =  $28x - 7x = 21x$  km

Also, the two trains are moving in opposite directions, =>relative speed of two trains =  $8x + 7x = 15$  km/hr

Now, time taken to meet =  $\frac{21x}{15x} = \frac{7}{5}$  hours

=>  $\frac{7}{5} \times 60 = 84$  minutes after 8.00 a.m.

=> Time when they meet = 8.00 a.m. + 84 min = **9:24 a.m.**

#### Question 119

A man gave 50% of his savings of 84,100 to his wife and divided the remaining sum among his two sons A and B of 15 and 13 years of age respectively. He divided it in such a way that each of his sons, when they attain the age of 18 years, would receive the same amount at 5% compound interest per annum. The share of B was

- A 20,000
- B 20,050
- C 22,000
- D 22,050

**Answer:** A

#### Explanation:

Total savings = Rs. 84100

Share of wife =  $\frac{50}{100} \times 84100 = 42050$

Let the share of B be 'b'

Share of A =  $42050 - b$

For A, time = 5 years

Rate = 5%

Amount =  $P \times [1 + \frac{r}{100}]^n$

Amount =  $(42050 - b)[1 + \frac{5}{100}]^5$

Amount =  $(42050 - b) \times 1.27$

For B, time = 7 years

Amount =  $b[1 + \frac{5}{100}]^7$

Amount =  $1.4b$

Given that,

Amount of A = Amount of B

$(42050 - b) \times 1.27 = 1.4b$

$53403 - 1.27b = 1.4b$

$b = 20,000$

Hence, B got Rs. 20,000

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

#### Question 120

A fruit-seller buys some oranges and by selling 40% of them he realises the cost price of all the oranges. As the oranges being to grow over-ripe, he reduces the price and sells 80% of the remaining oranges at half the previous rate of profit. The rest of the oranges being rotten are thrown away. The overall percentage of profit is

- A 80
- B 84
- C 94
- D 96

Answer: B

**Explanation:**

Let us assume that the fruit seller buys 100 oranges for Rs. 100

He sells 40 oranges for Rs. 100

Profit obtained = 100 - 40 = Rs. 60

% Profit =  $\frac{60}{40} \times 100 = 150\%$

Now, he sells 80% of the remaining oranges at half the profit

i.e., he sells 48 oranges at 75% profit.

Selling Price of 48 oranges = 48 + 75% of 48 = Rs. 84

Rest of them are thrown away.

Total SP = 100 + 84 = 184

Profit = 184 - 100 = 84

% Profit = 84%

**Question 121**

$\frac{p}{a} + \frac{q}{b} + \frac{r}{c} = 1$  and  $\frac{a}{p} + \frac{b}{q} + \frac{c}{r} = 0$  where p,q,r and a,b,c are non-zero then the value of  $\frac{p^2}{a^2} + \frac{q^2}{b^2} + \frac{r^2}{c^2}$  is

- A -1
- B 0
- C 1
- D 2

Answer: C

**Explanation:**

Given,  $\frac{p}{a} + \frac{q}{b} + \frac{r}{c} = 1$

Squaring on both sides gives,  $(\frac{p}{a} + \frac{q}{b} + \frac{r}{c})^2 = 1^2$

$\frac{p^2}{a^2} + \frac{q^2}{b^2} + \frac{r^2}{c^2} + 2(\frac{pq}{ab} + \frac{qr}{bc} + \frac{rp}{ca}) = 1$  .....equ(1)

Also given that  $\frac{a}{p} + \frac{b}{q} + \frac{c}{r} = 0$

Solving this, we get  $aqr + bpr + cpq = 0$

Divide this with abc on both sides, we get  $\frac{aqr}{abc} + \frac{bpr}{abc} + \frac{cpq}{abc} = 0$

i.e.  $\frac{qr}{bc} + \frac{pr}{ac} + \frac{pq}{ab} = 0$ . Substituting this in equ(1).

We get,  $\frac{p^2}{a^2} + \frac{q^2}{b^2} + \frac{r^2}{c^2} = 1$

**Question 122**

If x is a rational number and  $\frac{(x+1)^3 - (x-1)^3}{(x+1)^2 - (x-1)^2} = 2$  then the sum of numerator and denominator of x is

- A 3
- B 4
- C 5
- D 7

Answer: B

Explanation:

$$\text{Given, } \frac{(x+1)^3 - (x-1)^3}{(x+1)^2 - (x-1)^2} = 2$$

On simplifying, we get  $\frac{6x^2+2}{4x} = 2$

$$\frac{3x^2+1}{2x} = 2$$

$$3x^2 + 1 = 4x$$

$$3x^2 - 4x + 1 = 0$$

$$(3x-1)(x-1)=0$$

As it was mentioned that x is rational number. Hence,  $x = \frac{1}{3}$

Hence,  $1 + \frac{1}{3} = \frac{4}{3}$ .

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Question 123

The area in sq. unit. of the triangle formed by the graphs of  $x=4$ ,  $y=3$  and  $3x+4y=12$  is

A 12

B 8

C 10

D 6

Answer: D

Explanation:

Clearly,  $x=4$  is a vertical line passing through (4,0) and  $y=3$  is a horizontal line passing through the point (0,3)

The line  $3x+4y=12$  also passes through (4,0) and (0,3).

Hence, it is a right angled triangle with base=4 units and height=3 units.

The area of the triangle is  $= \frac{1}{2}bh$

$$= \frac{1}{2} \times 4 \times 3$$

$$= 6 \text{ units}$$

Question 124

The equations  $3x+4y=10$  and  $x+2y=0$  have the solution (a, b). The value of  $a+b$  is

A 1

B 2

C 3

D 4

Answer: A

Explanation:

$$3x + 4y = 10 \rightarrow (1)$$

$$x + 2y = 0$$

$$(x + 2y = 0) \times 2$$

$$2x + 4y = 0 \rightarrow (2)$$

$$5x = 10$$

$$x = 4$$
$$y = -3$$
$$x + y = 1$$

**Question 125**

If  $x = \sqrt{5} + 2$ , then the value  $\frac{2x^2 - 3x - 2}{3x^2 - 4x - 3}$  is equal to

- A 0.185
- B 0.525
- C 0.625
- D 0.785

**Answer:** C

**Explanation:**

Given,  $x = (\sqrt{5} + 2)$

$$\frac{2x^2 - 3x - 2}{3x^2 - 4x - 3} = \frac{2(\sqrt{5} + 2)^2 - 3(\sqrt{5} + 2) - 2}{3(\sqrt{5} + 2)^2 - 4(\sqrt{5} + 2) - 3}$$

$$= \frac{21.18}{33.88}$$
$$= 0.625$$

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**Question 126**

If  $a = 2.234$ ,  $b = 3.121$  and  $c = -5.355$ , then the value of  $a^3 + b^3 + c^3 - 3abc$  is

- A -1
- B 0
- C 1
- D 2

**Answer:** B

**Explanation:**

$$\text{If } a + b + c = 0, a^3 + b^3 + c^3 = 3abc$$

Hence, the answer is 0.

**Question 127**

If  $x^2 + y^2 + 1 = 2x$ , then the value of  $x^3 + y^5$  is

- A 2
- B 0
- C -1
- D 1

**Answer:** D

**Explanation:**

$$x^2 + y^2 + 1 = 2x$$

$$x^2 - 2x + y^2 + 1 = 0$$

$$(x^2 - 2x + 1) + y^2 = 0$$

$$(x - 1)^2 + y^2 = 0$$

Since  $(x - 1)^2 \geq 0$  for all  $x$ , and  $y^2 \geq 0$  for all  $y$

and  $(x - 1)^2 + y^2 = 0$ , then

$$(x - 1)^2 = 0 \text{ and } y^2 = 0$$

So,  $x = 1, y = 0$

Hence,

$$x^3 + y^5 = 1$$

#### Question 128

If  $3(a^2 + b^2 + c^2) = (a + b + c)^2$ , then the relation between  $a, b$  and  $c$  is

A  $a = b = c$

B  $a = b \neq c$

C  $a < b < c$

D  $a > b > c$

Answer: A

#### Explanation:

Given,  $3(a^2 + b^2 + c^2) = (a + b + c)^2$

$$3(a^2 + b^2 + c^2) = 3(a^2 + b^2 + c^2) + 2[ab + bc + ca]$$

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

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

$$(a^2 - ab) + (b^2 - bc) + (c^2 - ca) = 0$$

$$a(a - b) + b(b - c) + c(c - a) = 0$$

This is only possible when  $a = b = c$ .

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#### Question 129

If  $(\sin \alpha + \operatorname{cosec} \alpha)^2 + (\cos \alpha + \sec \alpha)^2 = k + \tan^2 \alpha + \cot^2 \alpha$ , then the value of  $k$  is

A 1

B 7

C 3

D 5

Answer: B

#### Explanation:

Consider,  $(\sin \alpha + \operatorname{cosec} \alpha)^2 + (\cos \alpha + \sec \alpha)^2$

$$\sin^2 \alpha + \operatorname{cosec}^2 \alpha + 2\sin \alpha \operatorname{cosec} \alpha + \cos^2 \alpha + \sec^2 \alpha + 2\cos \alpha \sec \alpha$$

$$\sin^2 \alpha + (1 + \cot^2 \alpha) + 2\sin \alpha \operatorname{cosec} \alpha + \cos^2 \alpha + (1 + \tan^2 \alpha) + 2\cos \alpha \sec \alpha$$

$$(\sin^2 \alpha + \cos^2 \alpha) + 1 + \cot^2 \alpha + 2 + 1 + \tan^2 \alpha + 2$$

$$7 + \tan^2 \alpha + \cot^2 \alpha$$

Hence,  $k = 7$

**Question 130**

The angle of elevation of the top of a vertical tower situated perpendicularly on a plane is observed as  $60^\circ$  from a point P on the same plane. From another point Q, 10m vertically above the point P, the angle of depression of the foot of the tower is  $30^\circ$ . The height of the tower is

- A 15 m
- B 30 m
- C 20 m
- D 25 m

**Answer: A**

**Explanation:**

In the given problem, distance between tower and point of observation will be the adjacent side and tower will be the opposite side. Let 'd' be the distance and 'h' be the height of the tower.

$$\tan 60 = h/d \Rightarrow d = h/\tan 60$$

$$\tan 30 = (h-10)/d \Rightarrow d = (h-10)/\tan 30$$

$$h/\tan 60 = (h-10)/\tan 30$$

$$h/h-10 = 3$$

$$2h = 30$$

$$h = 15\text{m}$$

Option A is the correct answer.

**Question 131**

If  $\sin 21^\circ = x/y$  then  $\sec 21^\circ - \sin 69^\circ$  is equal to

A  $y\sqrt{\frac{x^2}{y^2-x^2}}$

B  $x\sqrt{\frac{y^2}{y^2-x^2}}$

C  $y\sqrt{\frac{x^2}{x^2-y^2}}$

D  $x\sqrt{\frac{y^2}{x^2-y^2}}$

**Answer: A**

**Explanation:**

Given,  $\sin 21^\circ = x/y$ . So,  $\cos 21^\circ = \sqrt{1 - \sin^2 21^\circ}$ .  $\cos 21^\circ = \sqrt{1 - \left(\frac{x}{y}\right)^2}$

So,  $\sec 21^\circ = \frac{1}{\cos 21^\circ}$

Also  $\sin 69^\circ = \cos 21^\circ$ .

Hence,  $\sec 21^\circ - \sin 69^\circ = \frac{1}{\sqrt{1 - \left(\frac{x}{y}\right)^2}} - \sqrt{1 - \left(\frac{x}{y}\right)^2}$

$= y\sqrt{\frac{x^2}{y^2-x^2}}$

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**Question 132**

If  $\sec \alpha + \tan \alpha = 2$ , then value of  $\sin \alpha$  is (assume that  $0 < \alpha < 90^\circ$ )

- A 0.4
- B 0.5
- C 0.6
- D 0.8

**Answer: C**

**Explanation:**

We know  $\sec^2\alpha - \tan^2\alpha = 1$

$$(\sec\alpha + \tan\alpha)(\sec\alpha - \tan\alpha) = 1$$

$$(\sec\alpha - \tan\alpha) = \frac{1}{2}$$

$$(\sec\alpha + \tan\alpha) = 2$$

$$\sec\alpha = \frac{5}{4}$$

$$\cos\alpha = \frac{4}{5}$$

$$\sin\alpha = \frac{3}{5} = 0.6$$

**Question 133**

If  $3 \sin \theta + 5 \cos \theta = 5$ , then the value of  $5 \sin \theta - 3 \cos \theta$  will be

- A  $\pm 3$
- B  $\pm 5$
- C  $\pm 2$
- D  $\pm 1$

**Answer: A**

**Explanation:**

$$3 \sin \theta + 5 \cos \theta = 5$$

$$5 \sin \theta - 3 \cos \theta = x$$

On squaring them and adding, we get

$$9\sin^2\theta + 25\cos^2\theta + 25\sin^2\theta + 9\cos^2\theta = 25 + x^2$$

$$34 = 25 + x^2$$

$$x = 3, -3$$

**Question 134**

If  $\theta$  is an acute angle and  $\tan \theta + \cot \theta = 2$ , then the value of  $\tan^5\theta + \cot^5\theta$  is

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

**Answer: B**

**Explanation:**

$$\tan \theta + \cot \theta = 2$$

$$\theta = 45^\circ$$

$$\tan \theta = \cot \theta = 1$$

$$\tan^5\theta + \cot^5\theta = 2$$



## SSC CHSL Previous Question papers (download pdf)

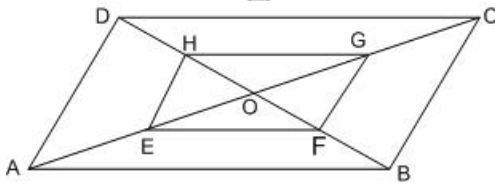
### Question 135

ABCD is a parallelogram in which diagonals AC and BD intersect at O. If E, F, G and H are the mid points of AO, DO, CO and BO respectively, then the ratio of the perimeter of the quadrilateral EFGH to the perimeter of parallelogram ABCD is

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

**Answer:** C

**Explanation:**



We know that in a triangle the line segment joining the mid points of two sides, is parallel to the third side and measures half of the third side.

In the triangle OAB, EF is the line joining the mid points of OA and OB. Hence  $EF = \frac{1}{2} AB$ .

In the triangle OBC, FG is the line joining the midpoints of OB and OC.

hence,  $FG = \frac{1}{2} BC$

similarly,  $GH = \frac{1}{2} CD$  and  $HE = \frac{1}{2} DA$

perimeter of the quadrilateral EFGH =  $\frac{1}{2} AB + \frac{1}{2} BC + \frac{1}{2} CD + \frac{1}{2} DA$

=  $\frac{1}{2}$  (Perimeter of parallelogram ABCD)

Hence, Option C is correct.

### Question 136

The simple value of  $\tan 1^\circ \cdot \tan 2^\circ \cdot \tan 3^\circ \dots \tan 89^\circ$  is

- A 1/2
- B 0
- C 1
- D 2/3

**Answer:** C

**Explanation:**

Given,  $\tan 1^\circ \cdot \tan 2^\circ \cdot \tan 3^\circ \dots \tan 89^\circ$

But  $\tan 89^\circ$  can be written as  $\tan(90-1) = \cot 1$   $\tan(90-\theta) = \cot(\theta)$ . Similarly

$\tan 88 = \cot 2$

$\tan 87 = \cot 3$ .....up to  $\tan 46 = \cot 44$

But the centre term  $\tan 45^\circ$  is left over because total no. of terms is odd. Also  $\tan 45 = 1$ .

Hence,  $\tan 1^\circ \cdot \tan 2^\circ \dots \tan 44^\circ \cdot \tan 45^\circ \cdot \cot 44^\circ \dots \cot 1^\circ$

$\tan$  and  $\cot$  with same value cancel out each other.

so ....remaining is  $\tan 45^\circ$

Hence, the answer is 1.

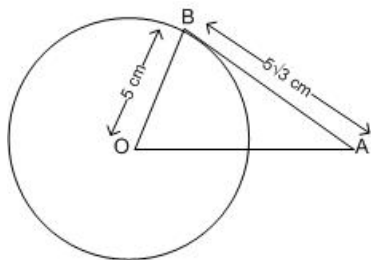
Question 137

The length of a tangent from an external point to a circle is  $5\sqrt{3}$  unit. If radius of the circle is 5 units, then the distance of the point from the circle is

- A 10 units
- B 15 units
- C -5 units
- D -15 units

Answer: A

Explanation:



$\therefore$  AB is a tangent to circle at B,

$\therefore \angle OBA = 90^\circ$

In  $\triangle AOB$ ,

$$AO^2 = OB^2 + AB^2$$

$$AO^2 = 5^2 + (5\sqrt{3})^2$$

$$AO = 10\text{ cm}$$

Hence, Option A is correct.

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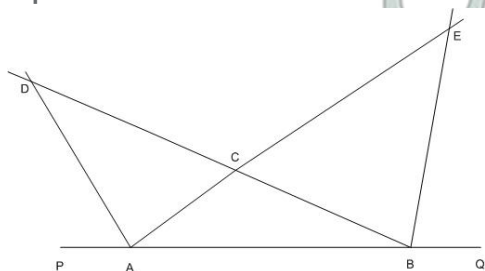
Question 138

In  $\triangle ABC$ ,  $\angle C$  is an obtuse angle. The bisectors of the exterior angles at A and B meet BC and AC produced at D and E respectively. If  $AB = AD = BE$ , then  $\angle ACB =$

- A  $105^\circ$
- B  $108^\circ$
- C  $110^\circ$
- D  $135^\circ$

Answer: B

Explanation:



From the question,

$$AB = AD = BE$$

Let,  $\angle D = x$  and  $\angle E = y$

In  $\triangle ABD$ ,

$$\angle ADB = \angle ABD = x \text{ (since } AB = AD)$$

Similarly, in  $\triangle AEB$ ,

$$\angle AEB = \angle EAB = y$$

In  $\triangle ABD$ ,

$$\angle PAD = \angle ADB + \angle ABD = 2x \text{ (exterior angle of an triangle)}$$

Since, AD is bisector of  $\angle A$ ,  $\angle PAD = \angle CAD = 2x$

Similarly, BE is bisector of  $\angle B$  so,

$$\angle QBE = \angle CBE = 2y$$

In  $\triangle ABD$ ,

$$\angle ADB + \angle ABD + \angle BAD = 180^\circ$$

$$\Rightarrow x + x + \angle CAD + \angle CAB = 180^\circ$$

$$\Rightarrow 2x + 2x + y = 180^\circ$$

$$\Rightarrow 4x + y = 180^\circ \text{ -----eq 1}$$

Similarly, for  $\triangle ABE$ ,

$$4y + x = 180^\circ \text{ -----eq 2}$$

Solving the two equations simultaneously

$$x = 36^\circ \text{ and } y = 36^\circ$$

Hence, in  $\triangle ABC$ ,

$$x + y + \angle ACB = 180^\circ$$

$$\Rightarrow 36 + 36 + \angle ACB = 180^\circ$$

$$\Rightarrow \angle ACB = 108^\circ$$

Hence, option B is correct.

#### Question 139

ABC is an equilateral triangle and O is its circumcentre, then the  $\angle AOC$  is

A  $100^\circ$

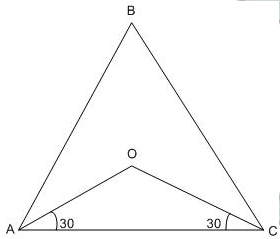
B  $110^\circ$

C  $120^\circ$

D  $130^\circ$

Answer: C

Explanation:



$\triangle ABC$  is an equilateral triangle,

$$\angle OAC = \frac{\angle BAC}{2} \text{ (In equilateral triangle medians and angle bisectors are same)}$$

$$= 30$$

Similarly,

$$\angle OCA = 30$$

In  $\triangle OAC$ ,

$$\angle AOC + \angle OAC + \angle OCA = 180$$

$$\angle AOC + 30 + 30 = 180$$

$$\angle AOC = 120$$

Hence, Option C is correct.

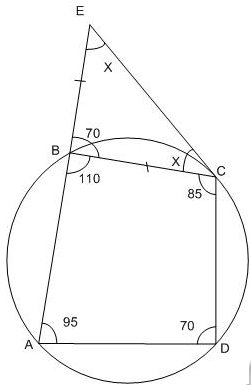
Question 140

ABCD is a cyclic quadrilateral. The side AB is extended to E in such a way that BE = BC. If  $\angle ADC = 70^\circ$ ,  $\angle BAD = 95^\circ$ , then  $\angle DCE$  is equal to

- A  $140^\circ$
- B  $120^\circ$
- C  $165^\circ$
- D  $110^\circ$

Answer: A

Explanation:



$\because$  ABCD is a cyclic quadrilateral,

$$\angle ADC + \angle ABC = 180$$

$$\angle ABC = 110$$

Similarly  $\angle BCD = 85$

$$\angle EBC = 180 - \angle ABC$$

$$\angle EBC = 70$$

$\because$  BC=BE,

$$\angle BEC = \angle BCE = x$$

In  $\triangle BEC$ ,

$$\angle BEC + \angle CBE + \angle ECB = 180$$

$$70 + x + x = 180$$

$$x = 55$$

$$\angle DCE = \angle ECB + \angle DCB$$

$$\angle DCE = 55 + 85$$

$$\angle DCE = 140$$

Hence, Option A is correct.

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Question 141

If the sum of interior angles of a regular polygon is equal to two times the sum of exterior angles of that polygon, then the number of sides of that polygon is

- A 5
- B 6
- C 7

D 8

Answer: B

**Explanation:**

Let the polygon be 'n'-sided.

$$\text{Sum of interior angles of a polygon} = (n - 2)180$$

$$\text{Sum of exterior angles of a polygon} = 360$$

$\therefore$  Sum of interior angles of a polygon =  $2 \times$  Sum of exterior angle of a polygon

$$(n - 2)180 = 2 \times 360$$

$$n = 6$$

Hence, Option B is correct.

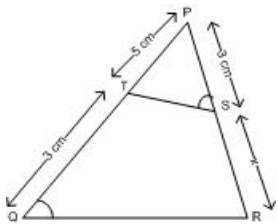
**Question 142**

In  $\triangle PQR$ , S and T are points on sides PR and PQ respectively such that  $\angle PQR = \angle PST$ . If PT = 5 cm, PS = 3 cm and TQ = 3 cm, then length of SR is

- A 5 cm
- B 6 cm
- C  $3\frac{1}{3}$  cm
- D  $4\frac{1}{3}$  cm

Answer: C

**Explanation:**



Let SR be 'x'.

In  $\triangle PTS$  and  $\triangle PQR$ ,

$$\angle PST = \angle PQR.$$

$$\text{and } \angle TPS = \angle RPS.$$

$\therefore \triangle PTS$  is similar to  $\triangle PRQ$ .

$$\therefore \frac{PT}{PR} = \frac{PS}{PQ}.$$

$$\frac{5}{3+x} = \frac{3}{3+5}.$$

$$x + 3 = \frac{40}{3}.$$

$$x = \frac{31}{3}.$$

Hence, Option C is correct.

**Question 143**

Two circles are of radii 7 cm and 2 cm their centres being 13cm apart. Then the length of direct common tangent to the circles between the points of contact is

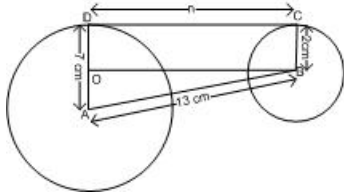
- A 12 cm
- B 15 cm

C 10 cm

D 5 cm

Answer: A

Explanation:



Let the length of direct common tangent be 'n' cm.

In  $\triangle AOB$ ,

$AO = 7 - 2 = 5$  cm,  $AB = 13$  cm,  $BO = n$

Using pythagoras's theorem in  $\triangle AOB$ ,

$$AO^2 + BO^2 = AB^2$$

$$5^2 + n^2 = 13^2$$

$$n = 12 \text{ cm}$$

Hence Option A is correct.

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### Instructions

The following table gives zonewise survey report of the people of a country who take coffee. Study the table and answer the questions.

Take Coffee	Zone			
	North	East	West	South
More than 3 times a day	410	310	700	1450
1 to 3 times a day	1220	830	1250	1120
Twice a week	1640	710	950	420
Only once a week	620	540	530	350
Never	950	430	620	50

### Question 144

The percentage of people of south zone who take coffee at least once a day is close to

A 33.51

B 42.72

C 75.81

D 80.82

Answer: C

Explanation:

Total no. of people in South zone =  $1450 + 1120 + 420 + 350 + 50 = 3390$

People who take coffee at least once a day = (1 to 3 times a day) + (more than 3 times a day)

$$= 1450 + 1120 = 2570$$

$$\Rightarrow \text{Required \%} = \frac{2570}{3390} * 100$$

$$= 75.81\%$$

### Question 145

The percentage of people from non-west zone who take coffee 'only once a week' is approximately

- A 11
- B 12
- C 13
- D 14

**Answer:** D

**Explanation:**

Total no. of people in :

North zone =  $410+1220+1640+620+950 = 4840$

East zone =  $310+830+710+540+430 = 2820$

South zone =  $1450+1120+420+350+50 = 2570$

=> Total no. of people in non-west zone =  $4840+2820+2570 = 11050$

No. of people who take coffee only once a week in non-west zone =  $620+540+350 = 1510$

=> Required % =  $\frac{1540}{11050} * 100 = 13.67\%$   
 = ~14%

**Question 146**

The ratio of the total number of people surveyed who take coffee more than 3 times a day to the total number of people who do not take coffee at all is

- A 1 : 1.4
- B 1.4 : 1
- C 1.5 : 1
- D 1 : 1.1

**Answer:** B

**Explanation:**

No. of people who take coffee more than 3 times a day =  $410+310+700+1450 = 2870$

No. of people who never take coffee =  $950+430+620+50 = 2050$

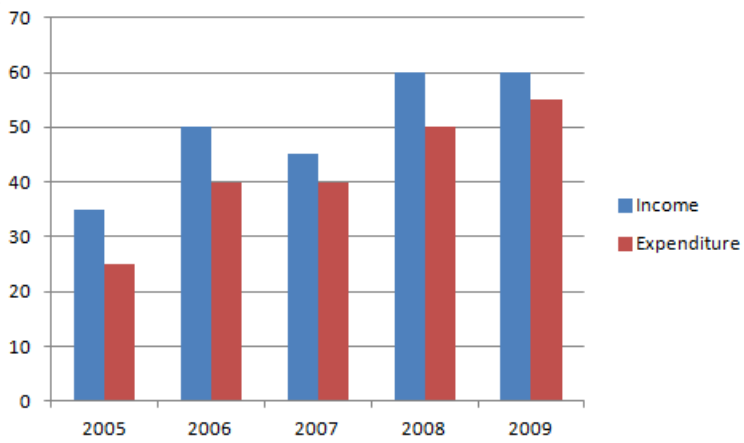
=> Required ratio =  $\frac{2870}{2050} = 1.4$

=> 1.4 : 1

## SSC CGL Free Mock Test

**Instructions**

Study the following graph which shows income and expenditure of a company over the years and answer the questions.



**Question 147**

The difference in profit (in Rs. crores) of the company during 2007 and 2008 is

- A 5
- B 10
- C 15
- D 20

**Answer: A**

**Explanation:**

Profit = Income - Expenditure

Income in 2007 = 45

Expenditure in 2007 = 40

$$\Rightarrow \text{Profit in 2007} = 45 - 40 = 5$$

Income in 2008 = 60

Expenditure in 2008 = 50

$$\Rightarrow \text{Profit in 2008} = 60 - 50 = 10$$

Required difference =  $10 - 5 = 5$

**Question 148**

In how many years was the expenditure of the company more than the average expenditure of the given years ?

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

**Answer: C**

**Explanation:**

Expenditure of the company in :

2005 = 25

2006 = 40

2007 = 40

2008 = 50



2009 = 55

$$\Rightarrow \text{Average expenditure} = \frac{25+40+40+50+55}{5} = 42$$

So, only in years '2008' & '2009', the expenditure of the company is greater than the average expenditure.

Ans - (C)

**Question 149**

The percentage increase in income of the company from 2007 to 2008 is

A 30

B 25

C  $33\frac{1}{3}$

D  $42\frac{6}{7}$

Answer: C

**Explanation:**

Income of company in 2007 = 45

Income of company in 2008 = 60

$$\begin{aligned} \Rightarrow \% \text{ increase} &= \frac{60-45}{45} * 100 = \frac{100}{3} \\ &= 33\frac{1}{3}\% \end{aligned}$$

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**Question 150**

Ratio of total income to total expenditure of the company over the years is

A 21:25

B 25:21

C 26:21

D 25:22

Answer: B

**Explanation:**

Total income of the company over the years = 35+50+45+60+60 = 250

Total expenditure = 25+40+40+50+55 = 210

$$\Rightarrow \text{Required ratio} = \frac{250}{210} = 25 : 21$$

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**English**

**Instructions**

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

**Question 151**

He feels his troubles (1)/ as much or (2)/ even more than they. (3)/ No error (4)

- A He feels his troubles
- B as much or
- C even more than they.
- D No error

**Answer: C**

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**Question 152**

I like reading (1)/ more than (2)/ to play. (3)/ No error (4)

- A I like reading
- B more than
- C to play.
- D No error

**Answer: C**

**Question 153**

The old lady swooned (1)/ but was soon (2)/ restored at senses. (3)/ No error (4)

- A The old lady swooned
- B but was soon
- C restored at senses.
- D No error

**Answer: C**

**Question 154**

I shall have to (1)/ withdraw from my savings (2)/ to buy a new car. (3)/ No error.(4)

- A I shall have to
- B withdraw from my savings
- C to buy a new car.
- D No error

**Answer: D**

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**Question 155**

The whole block of flats (1)/ including two shops were (2)/ destroyed in fire. (3)/ No error (4)

- A The whole block of flats
- B including two shops were
- C destroyed in fire
- D No error

**Answer: B**

**Instructions**

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

**Question 156**

He was..... about whether to do it or not.

- A ambiguous
- B ambivalent
- C ambidextrous
- D uncertain

**Answer: D**

**Question 157**

The minister..... on the petition before it was taken up for discussion.

- A could sign
- B signed
- C had signed
- D must sign

**Answer: C**

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**Question 158**

The foolish crows .....to sing.

- A crow
- B jump
- C tried
- D try

**Answer: D**

**Question 159**

Truculent in defending their individual rights of sovereignty under the Articles of Confederation, the newly formed states..... constantly.

- A apologized
- B digressed
- C conferred
- D squabbled

**Answer: A**

**Question 160**

His conduct is bad. and his honesty is not..... suspicion.

- A above
- B beyond
- C under
- D in

**Answer: B**

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**Instructions**

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

**Question 161**

**Porous**

- A Adventurous
- B Permeable
- C Pungent
- D Concrete

**Answer: B**

**Question 162**

**Inspid**

- A Spicy
- B Bland
- C Interesting
- D Warm

**Answer: B**

**Question 163**

**Convalesce**

- A Diminish
- B Admonish
- C Recover
- D Convey

**Answer: C**

## General Science Notes for SSC CGL

**Instructions**

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

**Question 164**

**Suppress**

- A Reveal
- B Increase
- C Open
- D Explain

**Answer: A**

**Question 165**

**Vocal**

- A Voluble
- B Calm
- C Quite
- D Silent

**Answer: D**

**Question 166**

**Indict**

- A Accuse
- B Exonerate
- C Incriminate
- D Impeach

**Answer: B**

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### Instructions

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

#### Question 167

**There is no cut and dried method for doing this.**

- A simple
- B honest
- C ready made
- D understandable

**Answer: C**

#### Explanation:

'Cut and dried' means some some pre-determined or ready made method. Hence, option C is the correct answer.

#### Question 168

**Suddenly the man blacked out during the parade and had to be helped to a quiet place.**

- A lost temper
- B lost control over himself
- C lost consciousness
- D lost balance

**Answer: C**

#### Explanation:

Black out in the given context refers to losing consciousness. Hence, option C is the correct answer.

#### Question 169

**Hold your horses for a moment while I make a phone call.**

- A Be patient
- B Stayout
- C Be quiet
- D Wait

**Answer: D**

#### Explanation:

'To hold ones horses' means to wait for sometime. Hence, option D is the correct answer.

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#### Question 170

**Sachin Tendulkar's batting skills make him a cut above the rest.**

- A taller than
- B superior to
- C senior to
- D different from

**Answer: B**

**Explanation:**

'Cut above' means superior to. Hence, option B is the correct answer.

**Question 171**

**I am very interested to know the outcome of the debate, kindly keep me in the loop.**

- A out of it
- B informed about the fees
- C informed about the last date of joining
- D informed regularly

**Answer: D**

**Explanation:**

To keep someone in the loop means to keep him updated about the happenings. Hence, option D is correct.

**Instructions**

In the following questions, a sentence/ part of the sentence is printed in bold. Below are given alternatives to the bold sentence/part of the sentence at a, b: and c: which may improve the sentence. Choose the correct alternative. In case no improvement is needed, your answer is d.

**Question 172**

**The visitors arrived at a lucky moment.**

- A an opportunistic
- B an opportunity
- C an opportune
- D No improvement

**Answer: C**

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**Question 173**

**'The government can see scarcely any valid reason to launch an inquiry.**

- A cannot scarcely see any valid reason
- B can see any valid reason scarcely
- C can scarcely see any valid reason
- D No improvement

**Answer: C**

**Question 174**

**Henry is taking John for tea.**

- A taking John on tea
- B taking John to tea
- C taking John at tea
- D No improvement

**Answer: D**

**Question 175**

**The medicines made miracles and healed me in two days.**

- A The medicines brought acles
- B The medicines worked miracles
- C The medicine performed miracles
- D No improvement

**Answer: B**

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**Question 176**

**Any of these two books is good.**

- A Any of this
- B Either of these
- C Any other of this
- D No improvement

**Answer: B**

**Question 177**

**The report highlights a number of instance of injustice .**

- A highlight a number of instances of injustice
- B highlights a numbers of instances of injustice
- C highlights a number of instances of injustice
- D No improvement

**Answer: C**

**Question 178**

**He was for a time our captain.**



- A for sometime
- B once
- C at any time
- D No improvement

**Answer: B**

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**Question 179**

**He made the utmost effort to save us.**

- A an all-out
- B an altered
- C an intentional
- D No improvement

**Answer: A**

**Question 180**

**He belongs to a rich family.**

- A a well-to-do family
- B an upper class family
- C a well-known family
- D No improvement

**Answer: A**

**Question 181**

**Suraj looked at Sunil with a question.**

- A questioningly
- B questionably
- C wistfully
- D No improvement

**Answer: B**

## SSC CHSL Previous Question papers (download pdf)

**Instructions**

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

**Question 182**

To remove an objectionable part from a book.

- A Exterminate
- B Expurgate
- C Extirpate
- D Destroy

**Answer: B**

**Question 183**

Pertaining to sheep

- A Canine
- B Bovine
- C Ovine
- D Feline

**Answer: C**

**Question 184**

Hole excavated by an animal as dwelling

- A Borrow
- B Burrow
- C Bore
- D Pierce

**Answer: B**

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**Question 185**

Person believing in free will

- A Guardian
- B Tyrant
- C Humanitarian
- D Libertarian

**Answer: D**

**Question 186**

Small pieces of metal that fly out from an exploding bomb

- A Shrapnel
- B Splinters
- C Filings
- D Bullets

**Answer: B**

**Question 187**

All the arts, beliefs and social institutions etc. characteristic of a race

- A Culture
- B Civilization
- C Infrastructure
- D Ritual

**Answer: A**

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**Question 188**

The act of speaking about one's thoughts when one is alone.

- A Silence
- B Monologue
- C Dialogue
- D Soliloquy

**Answer: D**

**Instructions**

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

**Question 189**

- A Corralative
- B Correlative
- C Corilative
- D Correletive

**Answer: B**

**Question 190**

- A Sychological

- B Psychological
- C Psykological
- D Sykological

**Answer: B**

## Join SSC Daily Quiz Telegram Group

### Instructions

Read the passages carefully and choose the best answer to each question out of the four alternatives.

Poverty can be defined as a social phenomenon in which a section of the society is unable to fulfill even its basic necessities of life. When a substantial segment of the society is deprived of the minimum level of living and continues at a bare subsistence level, that society is said to be plagued with mass poverty. The countries of the third world exhibit invariably the existence of mass poverty, although pockets of poverty exist even in the developed countries of Europe and America.

Attempts have been made in all societies to define poverty, but all of them are conditioned by the vision of minimum or good life obtaining in society. For instance, the concept of poverty in the U.S.A. would be significantly different from that in India because the average man is able to afford a much higher level of living in the United States. There is an effort in all definitions of poverty to approach the average level of living in a society and as such these definitions reflect the coexistence of inequalities in a society and the extent to which different societies are prepared to tolerate them. For instance, in India, the generally accepted definition of poverty emphasizes minimum level of living rather than a reasonable level of living. This attitude is borne out of a realization that it would not be possible to provide even a minimum quantum of basic needs for some decades and therefore, to talk about a reasonable level of living or good life may appear to be wishful thinking at the present stage. Thus, political considerations enter the definitions of poverty because programmes of alleviating poverty may become prohibitive as the vision of a good life widens.

### Question 191

**What is poverty according to the writer?**

- A Ability to consider it as social phenomenon of a substantial segment of society.
- B Inability of a society to provide the basic necessities of life.
- C A political compulsion that dictates economic policies.
- D A form of exhibition of subsistence living.

**Answer: B**

### Question 192

**What conditions the various attempts to define poverty ?**

- A The definition of poverty in India
- B The definition of poverty in the USA
- C The vision of minimum or good life
- D Political considerations

**Answer: C**

### Question 193

**What do all definitions of poverty do ?**

- A Reflect coexistence of inequalities in society.
- B Societies tolerance of inequalities.
- C Approach the average level of living in a society.
- D Minimum level of living in India.

**Answer:** A

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### Question 194

**Definition of poverty in India emphasizes minimum level of living because**

- A It is impossible at this stage to provide a reasonable quantum of living.
- B Political considerations enter the definitions of poverty,
- C There is a reasonable level of good living.
- D Programmes of alleviation of poverty have been initiated.

**Answer:** A

### Question 195

**Societies in the third world can be characterised plagued by mass poverty, because**

- A Europe and America have pockets of poverty.
- B Poverty is a mass social phenomenon.
- C There is a wide variation in the definition of poverty.
- D Societies live at a bare subsistence level.

**Answer:** D

### Instructions

Read the passage carefully and choose the best answer to each question out of the four alternatives

By the mid-nineteenth century, mass production of paper patterns, the emergence of the home sewing machine, and the convenience of mail order catalogues brought fashionable clothing into the American home. By the early twentieth century, home economists working in extension and outreach programs taught women how to use paper patterns to improve the fit and efficiency to new garments as well as how to update existing ones.

Teachers of home economics traditionally made home sewing a critical part of their curriculum, emphasizing self-sufficiency and resourcefulness for young women. However, with the increasing availability of mass-produced clothing in catalogues and department stores, more and more women preferred buying garments to making them. As a result, home economists shifted their attention to consumer education.

Through field study's analysis and research, they became experts on the purchase and preservation of ready-to-wear clothing for the family, offering budgeting instruction targeted at adolescent girls. Modern home sewing made it possible for American women to transcend their economic differences and geographic locations with clothing that was increasingly standardized. The democratization of fashion continued through the twentieth century as the ready-to-wear market expanded and home sewing became more of a pastime than a necessity.

### Question 196

**What were the skills that were emphasized for young women ?**

- A Self confidence and self-esteem
- B Self-sufficiency and resourcefulness
- C Resourcefulness and self-confidence
- D Prudence and resourcefulness

**Answer: B**

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### Question 197

Who became experts on the purchase and preservation of ready-to-wear clothing for the family ?

- A Owners of department stores
- B Field-study analysts
- C Young women
- D Teachers of home economics

**Answer: D**

### Question 198

Who was the target group ?

- A Young women
- B Young girls
- C Adolescent girls
- D Working women

**Answer: C**

### Question 199

How did home sewing help American women ?

- A They became field analysts and researchers.
- B They went beyond economic boundaries.
- C They found good jobs.
- D They became excellent teachers.

**Answer: B**

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### Question 200

What improved the fit and efficiency of new garments ?

- A Sewing machines
- B Economists
- C Mass production
- D Paper patterns

Answer: D

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