



## SSC CHSL 12 Jan 2017 Evening Shift

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# Reasoning

## Instructions

For the following questions answer them individually

### Question 1

Select the related word/letters/number from the given alternatives. Honest : Truthful :: Obdurate : ?

- A Adamant
- B Soft
- C Yielding
- D Submissive

Answer: A

### Explanation:

Honest and truthful are synonyms, similarly synonym of obdurate is adamant meaning stubborn.

=> Ans - (A)

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### Question 2

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

FGH : ? :: QRS : SUW

- A OPQ
- B GHI
- C HIJ
- D HJL

Answer: D

### Explanation:

Expression = FGH : ? :: QRS : SUW

The pattern followed is :

$\begin{array}{cccccc} +1 & +1 & +2 & +3 & +1 & +1 & +2 & +3 \\ \hline F & G & H & H & J & L & Q & R & S & S & U & W \end{array}$

Thus, FGH : HJL

=> Ans - (D)

### Question 3

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

CDE : XWV :: ? : QPO

- A KLM
- B JKL
- C GHI
- D ABC

**Answer: B**

**Explanation:**

Expression = CDE : XWV :: ? : QPO

Alphabets at the corresponding position from the *reverse* end are written.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
↓ ↓ ... ↓ ... ↓  
Z Y X W V U T S R Q P O N M L K J I H G F E D C B A

Similarly, JKL : QPO

=> Ans - (B)

**Question 4**

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

2 : 10 :: 3 : ?

A 30

B 25

C 17

D 35

**Answer: A**

**Explanation:**

Expression = 2 : 10 :: 3 : ?

The pattern followed is =  $x : x^3 + x$

Eg :-  $2 : 2^3 + 2 = 2 : 10$

Similarly,  $3^3 + 3 = 27 + 3 = 30$

=> Ans - (A)

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**Question 5**

Select the odd word/letters/number/number pair from the given alternatives.

A Adamant

B Stubborn

C Tenacious

D Lenient

**Answer: D**

**Explanation:**

Except Lenient, other three are synonyms of each other meaning unyielding, hence it is the odd one out.

=> Ans - (D)

**Question 6**

Select the odd word/letters/number/number pair from the given alternatives.

A XAD

- B PRU
- C JLO
- D ACF

Answer: A

**Explanation:**

(A) : X (+3 letters) = A (+3 letters) = D

(B) : P (+2 letters) = R (+3 letters) = U

(C) : J (+2 letters) = L (+3 letters) = O

(D) : A (+2 letters) = C (+3 letters) = F

=> Ans - (A)

**Question 7**

Select the odd word/letters/number/number pair from the given alternatives.

- A 325
- B 428
- C 326
- D 177

Answer: A

**Explanation:**

The product of first two digits is equal to the last digit, but  $3 \times 2 \neq 5$ , hence 325 is the odd one out.

=> Ans - (A)

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**Question 8**

Select the odd word/letters/number/number pair from the given alternatives.

- A 532
- B 413
- C 111
- D 541

Answer: C

**Explanation:**

The positive difference between the first two digits is equal to the last digit, but  $1 - 1 \neq 1$ , hence 111 is the odd one out.

=> Ans - (C)

**Question 9**

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. Nanga Parbat, Kanchenjunga, Mount Godwin Austen, ?

- A Mount Everest

- B Nanda Devi
- C Dunagiri
- D Aravalli

Answer: A

**Explanation:**

Peaks in increasing order of height.

= Nanga Parbat -> Kanchenjunga -> Mount Godwin Austen -> Mount Everest

=> Ans - (A)

**Question 10**

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. GHI, ?, TUV, BCD

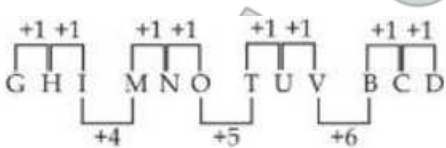
- A MNO
- B ONP
- C QRS
- D CDE

Answer: A

**Explanation:**

Expression : GHI, ?, TUV, BCD

The pattern followed is :



Thus, missing term = MNO

=> Ans - (A)

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**Question 11**

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. ?, YZ, DE, JK

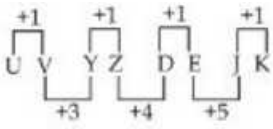
- A VU
- B UV
- C TU
- D TS

Answer: B

**Explanation:**

Expression : ?, YZ, DE, JK

The pattern followed is :



Thus, missing term = UV

=> Ans - (B)

**Question 12**

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.  
2, 3, 7, 16, ?

- A 21
- B 30
- C 32
- D 23

Answer: C

**Explanation:**

Squares of natural numbers are added.

$$2 + 1^2 = 3$$

$$3 + 2^2 = 7$$

$$7 + 3^2 = 16$$

$$16 + 4^2 = 32$$

=> Ans - (C)

**Question 13**

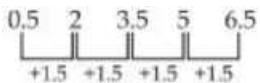
A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.  
0.5, 2, 3.5, ?, 6.5

- A 5
- B 4.5
- C 4
- D 6

Answer: A

**Explanation:**

1.5 is added to each number.



Thus, missing number = 5

=> Ans - (A)

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**Question 14**

Mohan, Ritika, Janvi, Priya and Riya are friends. Janvi runs faster than Ritika but slower than Priya. Mohan is the slowest runner and Riya runs faster than Priya. Who runs the fastest among the five?

- A Priya
- B Riya
- C Ritika
- D Mohan

**Answer: B**

**Explanation:**

Janvi runs faster than Ritika but slower than Priya, => Priya > Janvi > Ritika

Mohan is the slowest runner and Riya runs faster than Priya, => Riya > Priya

Combining above statements, we get : **Riya > Priya > Janvi > Ritika > Mohan**

∴ Riya runs the fastest among the five.

=> Ans - (B)

**Question 15**

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

- i. Beguile
- ii. Bigot
- iii. Begun
- iv. Bigamy

- A i, iii, ii, iv
- B i, iii, iv, ii
- C i, ii, iii, iv
- D i, iv, iii, ii

**Answer: B**

**Explanation:**

As per the order of dictionary :

= Beguile -> Begun -> Bigamy -> Bigot

≡ i, iii, iv, ii

=> Ans - (B)

**Question 16**

**In a certain code language, "RAINBOW" is written as "1987645" and "SNAP" is written as "3790". How is "PIANO" written in that code language?**

- A 08976
- B 08947
- C 08974
- D 08977

**Answer: C**

**Explanation:**

The codes for each letter is given :

P -> 0

I -> 8  
A -> 9  
N -> 7  
O -> 4

Thus, PIANO : 08974

=> Ans - (C)

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### Question 17

In the following question, two statements are given each followed by two conclusions I and II. You have to consider the statement to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

Statements:

- (I) All birds are trees.
- (II) Some trees are hens.

Conclusion:

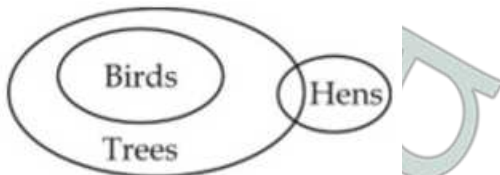
- (I) Some birds are hens.
- (II) Some hens are trees.

- A Conclusion I follows
- B Conclusion II follows
- C Neither I nor II follows
- D Both I and II follows

Answer: B

Explanation:

The venn diagram for above statements is :



Conclusion:

- (I) Some birds are hens = false
- (II) Some hens are trees = true

Thus, only conclusion II follows

=> Ans - (B)

### Question 18

If "A" denotes "multiplied by", "B" denotes "subtracted from", "C" denotes "added to" and "D" denotes "divided by", then  $8 B 31 C 49 D 7 A 16 = ?$

- A 89
- B 98
- C 102
- D 11

Answer: A



**Explanation:**

Expression :  $8 B 31 C 49 D 7 A 16 = ?$

$$\equiv 8 - 31 + 49 \div 7 \times 16$$

$$= -23 + (7 \times 16)$$

$$= -23 + 112 = 89$$

=> Ans - (A)

**Question 19**

Which set of letters when sequentially placed at the gaps in the given letter series shall complete it?

x\_zz\_xx\_z\_yx

A xyxy

B xxxy

C yyyz

D zyyy

**Answer: C**

**Explanation:**

The pattern followed is that in groups of 3, the term 'xyz' is alternatively repeated with its reverse.

= xyz zyx xyz zyx

=> Ans - (C)

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**Question 20**

Ram travels towards east covering 5 km. He takes a left turn and travels 10 km more. Then, he takes a right turn and travels another 5 km and finally takes a right turn to cover 10 km. How far is he from his original position?

A 10 km

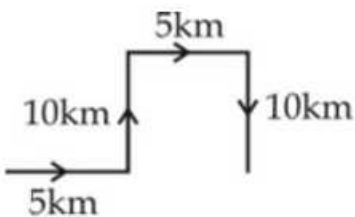
B 20 km

C 15 km

D 25 km

**Answer: A**

**Explanation:**



Ram travels towards east covering 5 km, then he takes a left turn and travels 10 km towards north. Then, he takes a right turn and travels another 5 km east and finally travels south for 10 km.

Thus, distance between initial and final position =  $5 + 5 = 10$  km

=> Ans - (A)

**Question 21**

Select the odd word/letters/number/number pair from the given alternatives.

- A America
- B India
- C Bangladesh
- D Pakistan

**Answer:** A

**Explanation:**

Except America other three are southeast Asian countries, hence America is the odd one out.

=> Ans - (A)

**Question 22**

Akram is the son of Shahid. Shahid's sister, Julie has a son Zeeshan and a daughter Yana. Zeba is the sister of Zeeshan's mother. How is Yana related to Zeba?

- A Mother
- B Granddaughter
- C Sister
- D Niece

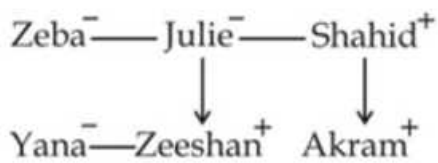
**Answer:** D

**Explanation:**

Akram is the son of Shahid.

Shahid's sister, Julie has a son Zeeshan and a daughter Yana.

Zeba is the sister of Zeeshan's mother, => Zeba is Julie's sister.



Thus, Yana is Zeba's niece.

=> Ans - (D)

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**Question 23**

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. Seed, Sapling, Plant, Flower, ?

- A Stem
- B Fruit
- C Root
- D Branch

**Answer: B**

**Explanation:**

Successive stages of plant fertilization.

= Seed -> Sapling -> Plant -> Flower -> Fruit

=> Ans - (B)

**Question 24**

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

- i. Aperture
- ii. Application
- iii. Appliance
- iv. Appeal

A iv, i, ii, iii

B i, iv, iii, ii

C i, iii, ii, iv

D i, ii, iii, iv

**Answer: B**

**Explanation:**

As per the order of dictionary :

= Aperture -> Appeal -> Appliance -> Application

≡ i, iv, iii, ii

=> Ans - (B)

**Question 25**

A's weight is more than the weight of C, and A has the second highest weight. E weighs more than A. B weighs more than D. Who is the heaviest?

A B

B D

C E

D A

**Answer: C**

**Explanation:**

A's weight is more than the weight of C, and A has the second highest weight, =>  $A > C$

E weighs more than A, =>  $E > A$

The last statement is redundant, as from above statements :  $E > A > C$

∴ E is the heaviest.

=> Ans - (C)

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**General Awareness**

**Instructions**

For the following questions answer them individually

**Question 26**

**Which of the following is a server side scripting language?**

- A HTML
- B DHTML
- C JavaScript
- D PHP

**Answer: A**

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**Question 27**

**Who invented Vacuum Flask?**

- A Charles Babbage
- B Alexander Fleming
- C Gregory Pincus
- D James Dewar

**Answer: D**

**Question 28**

**Myopia is a defect of eyes which is also known as**

- A Far Sightedness
- B Near Sightedness
- C Astigmatism
- D Night Blindness

**Answer: B**

**Question 29**

**Who is known as the father of Green Revolution?**

- A Dr. Robert Nucleus
- B Dr. Ian Wilmut
- C Dr. NE Borlaug
- D Dr. JC Bose

**Answer: C**

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**Question 30**

**Panthera Tigris is the scientific name of**

- A Panther
- B Tiger
- C Whale
- D Goat

**Answer: B**

**Question 31**

**Glass is also called .....**

- A Supercooled liquid
- B Super liquid
- C Ideal liquid
- D Distilled liquid

**Answer: A**

**Question 32**

**Pentane has .....structural isomers.**

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

**Answer: C**

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**Question 33**

**Which is representative of Dravida style of temple architecture?**

- A Viman
- B Shikhara
- C Mandapa
- D Gopuram

**Answer: A**

**Question 34**

**Kud is a folk dance of**

- A Kerala
- B Andhra Pradesh
- C Jammu & Kashmir
- D Maharashtra

**Answer: C**

**Question 35**

Calculate the economic profit for a firm if its total revenues are Rs. 35 crores, explicit costs are Rs. 7 crores, and implicit costs are Rs. 10 crores.

- A Rs. 32 crores
- B Rs. 52 crores
- C Rs. 18 crores
- D Rs. 38 crores

**Answer: C**

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**Question 36**

An increase in the growth rate of the nominal money supply results in

- A Lower rate of inflation
- B Higher rate of inflation
- C Lower interest rates
- D Currency appreciation

**Answer: B**

**Question 37**

Workers in leather tanning industries tend to suffer from

- A asthma
- B heart diseases
- C skin diseases
- D blood diseases

**Answer: C**

**Question 38**

Sphalerite is an ore/mineral of

- A Mercury

B Molybdenum

C Silver

D Zinc

Answer: D

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Question 39

Which of the following is a designated terror group?

A TehreekeTaliban

B JamaatulFakwa

C JamaatulAhrar

D Tehreekeislamiyat

Answer: C

Question 40

Dehradun is the capital city of .....

A Uttarakhand

B Uttar Pradesh

C Tripura

D Arunachal Pradesh

Answer: A

Question 41

Gir forest is located in .....

A Kerala

B Gujarat

C Jammu & Kashmir

D Karnataka

Answer: B

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Question 42

Babur was born in the year

A 1483

B 1583

C 1683

D 1783

Answer: A

**Question 43**

**Who was the First Governor General of Bengal?**

A Lord William Bentinck

B Sir William Denison

C The Lord Napier

D Warren Hastings

Answer: D

**Question 44**

**Who was the 1st Indian to win Mrs. World in 2001?**

A Sonali Bendre

B Reita Faria

C Lara Dutta

D Aditi Gowitrikar

Answer: D

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**Question 45**

**If a body slides over a surface, the force resisting the motion between them is called .....**

A Centripetal force

B Friction

C Centrifugal force

D Inertia

Answer: B

**Question 46**

**In a streamline flow, .....at every point in the fluid remains same.**

A force

B pressure

C velocity

D speed

Answer: C



**Question 47**

The drafting committee wrote the Indian Constitution in which language?

- A English and Hindi
- B Only English
- C English and Urdu
- D English, Hindi and Urdu

**Answer: A**

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**Question 48**

'M' in BIMARU stands for which state?

- A Maharashtra
- B Manipur
- C Madhya Pradesh
- D Mizoram

**Answer: C**

**Question 49**

Who has won the Formula One Australian Grand Prix 2016?

- A Daniel Ricciardo
- B Lewis Hamilton
- C Nico Rosberg
- D Sebastian Vettel

**Answer: C**

**Question 50**

Who wrote the book "Gone with the Wind"?

- A Jane Austen
- B William Blake
- C Charles Dickens
- D Margaret Mitchell

**Answer: D**

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## English

### Instructions

For the following questions answer them individually

### Question 51

Select the word with the correct spelling.

- A pamphlet
- B montaage
- C illusary
- D stroller

Answer: D

## SSC CGL Free Mock Test (Latest Pattern)

### Question 52

Rearrange the parts of the sentence in correct order.

The Finance Minister, under  
Pwhose supervision this  
Qhas not made any definite statement  
Rhas taken place,

- A RPQ
- B QRP
- C PRQ
- D QPR

Answer: C

### Question 53

Select the synonym of metropolitan

- A idyllic
- B arcadian
- C bucolic
- D urbane

Answer: D

### Question 54

In the following question, sentence given with blank is to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

He succeeded in proving his point with .....logic.

- A diabolical
- B irrefutable

- C rational
- D analytical

Answer: B

## SSC CHSL Important Questions and Answers (Download PDF)

### Question 55

Select the antonym of impiety

- A blasphemy
- B heresy
- C profanity
- D reverence

Answer: D

### Question 56

In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase. To bite off more than one can chew

- A To take on a commitment that one cannot fulfill
- B A task which has unexpectedly become very difficult
- C A greedy person will always suffer
- D To grab a share more than what is rightfully theirs

Answer: A

### Question 57

Select the antonym of pompous

- A modern
- B turgid
- C modest
- D vain

Answer: C

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### Question 58

Select the synonym of clasp

- A grip
- B commute

C clemency

D acquittal

Answer: A

**Question 59**

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

A Hatred should be nipped in the bud

B To do something difficult that one has been hesitating over

C To punish someone who was later found to be not guilty

D To prevent someone from getting killed

Answer: B

**Question 60**

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase. **to shut a door, window, or lid forcefully and loudly**

A to clam

B to strike

C to shutter

D to slam

Answer: D

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**Question 61**

Rearrange the parts of the sentence in correct order.

This too, is a classic

P"stock versus flow" problem, where

Qfocusing only on the latter

Rcompletely distorts the picture

A QRP

B RPQ

C PRQ

D PQR

Answer: D

**Question 62**

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

Veer said, "I was playing football".

- A Veer said he had been playing football.
- B Veer said he was playing football.
- C Veer said that, that he was playing football.
- D Veer said that he had been playing football.

Answer: D

**Question 63**

In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

At the party(A)/Rohit introduced me to his friend(B)/who is radio jockey.(C)/No error(D)

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

Answer: C

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**Question 64**

In the following question, sentence given with blank is to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

Expectant mothers are more .....to lung damage due to smoking.

- A vulnerable
- B disposed
- C sensitive
- D affected

Answer: A

**Question 65**

In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

Sarah's father, died(A)/of heart attack at(B)a very young age.(C)/No error(D)

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

Answer: D

**Question 66**

Select the word with the correct spelling.

- A circulate
- B cordonned
- C binommial
- D fontannel

**Answer: A**

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**Question 67**

Improve the bracketed part of the sentence.

The footballers (has been) arguing with the coach since morning.

- A was
- B had been
- C have been
- D no improvement

**Answer: C**

**Question 68**

Improve the bracketed part of the sentence. She has not been well (for the past) few months

- A since the past
- B for past
- C since the last
- D no improvement

**Answer: D**

**Question 69**

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase. sums of money expressed in a specified monetary unit

- A to denominate
- B to monetise
- C to nominate
- D demarche

**Answer: A**

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### Question 70

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

- A The storm in the village had destroyed several huts.
- B Several huts in the village have been destroyed by the storm.
- C The storm was destructive for the several huts in the village.
- D Several huts in the village were destroyed by the storm.

Answer: D

### Instructions

In the following passage, some of the words have been left out. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

But what does this enthusiasm for voting actually .....?(1) One popular theory ..... (2) that poor people .....(3) because they are intimidated into doing so. Intimidation occurs for sure but why then, voters in places where there is no intimidation do so? Another theory is that people vote in return for ..... (4) But recent research across India ..... (5) that those who spend the most do not always win elections and voters do not feel any obligation to vote for those handing out freebies. In fact, they often accept the goodies from all parties but vote for only one.

### Question 71

(1)

- A answer
- B signify
- C ponder
- D suppose

Answer: B

### Question 72

(2)

- A poses
- B supposes
- C disposes
- D proposes

Answer: D

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### Question 73

(3)

- A vote
- B are voting
- C have voted
- D voted

**Answer:** A

**Question 74**

(4)

- A bribes
- B favours
- C inducements
- D help

**Answer:** C

**Question 75**

(5)

- A show
- B has shown
- C had shown
- D showed

**Answer:** B

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**Mathematics**

**Instructions**

For the following questions answer them individually

**Question 76**

**If the selling price of an item is Rs 1150 after getting a discount of 8%, what is its marked price?**

- A Rs 1250
- B Rs 1242
- C Rs 1058
- D Rs 1064

**Answer:** A

**Explanation:**

Let Marked Price = Rs.  $x$



Selling price = Rs. 1150

$$\text{Discount \%} = \frac{(x-1150)}{x} \times 100 = 8$$

$$\Rightarrow \frac{x-1150}{x} = \frac{8}{100} = \frac{2}{25}$$

$$\Rightarrow 25x - 28750 = 2x$$

$$\Rightarrow 25x - 2x = 23x = 28750$$

$$\Rightarrow x = \frac{28750}{23} = \text{Rs. } 1250$$

$\Rightarrow$  Ans - (A)

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Question 77

What is the simplest form of  $(1 + \cos A)(\operatorname{cosec} A - \cot A)$ ?

A  $\cos A$

B  $\tan A$

C  $\cot A$

D  $\sin A$

Answer: D

Explanation:

Expression :  $(1 + \cos A)(\operatorname{cosec} A - \cot A)$

$$= (1 + \cos A) \left( \frac{1}{\sin A} - \frac{\cos A}{\sin A} \right)$$

$$= (1 + \cos A) \left( \frac{1 - \cos A}{\sin A} \right)$$

$$= \frac{1 - \cos^2 A}{\sin A} = \frac{\sin^2 A}{\sin A}$$

$$= \sin A$$

$\Rightarrow$  Ans - (D)

Question 78

In  $\Delta ABC$ , the median AD is 6 cm and CB is 12 cm, measure of angle CAB is

A  $90^\circ$

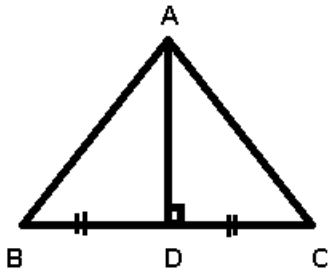
B  $30^\circ$

C  $60^\circ$

D  $120^\circ$

Answer: A

Explanation:



AD = 6 cm and BC = 12 cm

Since, AD is the median,  $\Rightarrow$  BD = DC = 6 cm

In  $\triangle ADC$ ,  $\Rightarrow$  AD = DC = 6 cm

$\Rightarrow \angle DCA = \angle DAC = 45^\circ$

Similarly, in  $\triangle ADB \Rightarrow \angle DAB = 45^\circ$

$\therefore \angle CAB = \angle DAC + \angle DAB = 45^\circ + 45^\circ = 90^\circ$

$\Rightarrow$  Ans - (A)

**Question 79**

What should be added to  $3(x-2y)$  to obtain  $2(3x+y) - 5(2x+3)$ ?

- A  $8y - 7x - 15$
- B  $8y - 7x + 15$
- C  $8y + 7x + 15$
- D  $8y + 7x - 15$

**Answer:** A

**Explanation:**

Let  $m$  should be added to  $3(x-2y)$  to obtain  $2(3x+y) - 5(2x+3)$

$$\Rightarrow (m) + [3(x - 2y)] = 2(3x + y) - 5(2x + 3)$$

$$\Rightarrow m + 3x - 6y = 6x + 2y - 10x - 15$$

$$\Rightarrow m = (2y + 6y) + (-4x - 3x) - 15$$

$$\Rightarrow m = 8y - 7x - 15$$

$\Rightarrow$  Ans - (A)

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**Question 80**

Curved surface area of a cylinder is 440 sq cm. If circumference of its base is 44 cm, what is the volume of the cylinder? (Take  $\pi = 22/7$ )

- A 1540 cubic cm
- B 3080 cubic cm
- C 770 cubic cm
- D 2310 cubic cm

**Answer:** A

**Explanation:**

Let radius of base of cylinder =  $r$  cm and height =  $h$  cm

Circumference of base =  $2\pi r = 44$

$$\Rightarrow 2 \times \frac{22}{7} \times r = 44$$

$$\Rightarrow r = 44 \times \frac{7}{44} = 7 \text{ cm}$$

Curved surface area of cylinder =  $2\pi rh = 440$

$$\Rightarrow 44 \times h = 440$$

$$\Rightarrow h = \frac{440}{44} = 10 \text{ cm}$$

$\therefore$  Volume of cylinder =  $\pi r^2 h$

$$= \frac{22}{7} \times (7)^2 \times 10$$

$$= 22 \times 70 = 1540 \text{ cm}^3$$

$\Rightarrow$  Ans - (A)

**Question 81**

$2\sin A \sin B$  is equal to

A  $\sin(A+B) + \sin(A-B)$

B  $\cos(A-B) - \cos(A+B)$

C  $\sin(A+B) - \sin(A-B)$

D  $\cos(A+B) + \cos(A-B)$

**Answer:** B

**Explanation:**

Expression :  $2\sin A \sin B$

$$= \sin A \sin B + \sin A \sin B$$

Adding and subtracting ( $\cos A \cos B$ )

$$= (\cos A \cos B + \sin A \sin B) + (-\cos A \sin B + \sin A \cos B)$$

$$= (\cos A \cos B + \sin A \sin B) - (\cos A \cos B - \sin A \sin B)$$

$$= \cos(A - B) - \cos(A + B)$$

$\Rightarrow$  Ans - (B)

**Question 82**

For triangle PQR, what is the equation of altitude PS if coordinates of P, Q and R are (5,1), (0,4) and (2,3) respectively?

A  $x + 2y = 33$

B  $2x - y = 9$

C  $2x - y = -3$

D  $x + 2y = -33$

**Answer:** B

**Explanation:**

Coordinates of P(5,1), Q(0,4) and R(2,3)

$$\text{Slope of QR} = \frac{3-4}{2-0} = \frac{-1}{2}$$

PS is perpendicular to QR, thus product of their slopes is -1

Let slope of PS =  $m$

$$\Rightarrow m \times \frac{-1}{2} = -1$$

$$\Rightarrow m = 2$$

Now, equation of PS having slope,  $m = 2$  and passing through P(5,1)

$$\Rightarrow (y - 1) = 2(x - 5)$$

$$\Rightarrow y - 1 = 2x - 10$$

$$\Rightarrow 2x - y = 10 - 1 = 9$$

$\Rightarrow$  Ans - (B)

## SSC CHSL Free Mock Test

### Question 83

If  $51.97 - (81.18 - x) - 59.39 = 5.268$ , then value of  $x$  will be

A 24.912

B 68.492

C 93.868

D 197.808

Answer: C

### Explanation:

Expression :  $51.97 - (81.18 - x) - 59.39 = 5.268$

$$\Rightarrow 51.97 - 81.18 + x = 5.268 + 59.39$$

$$\Rightarrow -29.21 + x = 64.658$$

$$\Rightarrow x = 64.658 + 29.21$$

$$\Rightarrow x = 93.868$$

$\Rightarrow$  Ans - (C)

### Question 84

If Gadadhar's salary is  $\frac{3}{2}$  times of Haamid's and Sarvesh's is  $\frac{4}{3}$  times of Haamid's, what is the ratio of Gadadhar's salary to Sarvesh's?

A 9:8

B 1:2

C 2:1

D 8:9

Answer: A

### Explanation:

Let Haamid's salary =  $6x$

$$\Rightarrow \text{Gadadhar's salary} = \frac{3}{2} \times 6x = 9x$$

$$\Rightarrow \text{Sarvesh's salary} = \frac{4}{3} \times 6x = 8x$$

$\therefore$  Ratio of Gadadhar's salary to Sarvesh's =  $\frac{9x}{8x}$

= 9 : 8

=> Ans - (A)

#### Question 85

What is the value of  $\sin 300^\circ$ ?

A 1

B  $\frac{\sqrt{2}}{2}$

C  $-\frac{1}{2}$

D  $-\frac{\sqrt{3}}{2}$

Answer: D

#### Explanation:

Expression :  $\sin 300^\circ$

$$= \sin(360 - 60)$$

$$= -\sin(60) = -\frac{\sqrt{3}}{2}$$

=> Ans - (D)

## SSC CHSL Previous Papers (DOWNLOAD PDF)

#### Question 86

If 31% of an electricity bill is deducted, Rs 1794 is still to be paid. How much was the original bill amount?

A Rs 1369

B Rs 2600

C Rs 2636

D Rs 1405

Answer: B

#### Explanation:

Let the original bill amount = Rs.  $100x$

$$\text{If 31\% of an electricity bill is deducted, bill left} = \frac{100-31}{100} \times 100x = 69x$$

$$\text{According to ques, } \Rightarrow 69x = 1794$$

$$\Rightarrow x = \frac{1794}{69} = 26$$

$$\therefore \text{Original bill amount} = 100 \times 26 = \text{Rs. } 2600$$

=> Ans - (B)

#### Question 87

If  $2(3x + 5) > 4x - 5 < 3x + 2$ ; then  $x$  can take which of the following values?

A -8

B 6

C 8

D 10

Answer: B

Explanation:

Expression 1 :  $2(3x + 5) > 4x - 5$

$$\Rightarrow 6x + 10 > 4x - 5$$

$$\Rightarrow 6x - 4x > -5 - 10$$

$$\Rightarrow 2x > -15$$

$$\Rightarrow x > \frac{-15}{2} \text{ -----(i)}$$

Expression 2 :  $4x - 5 < 3x + 2$

$$\Rightarrow 4x - 3x < 2 + 5$$

$$\Rightarrow x < 7 \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get :  $\frac{-15}{2} < x < 7$

The only value that  $x$  can take = 6

$\Rightarrow$  Ans - (B)

Question 88

Two cars travel from city A to city B at a speed of 60 and 108 km/hr respectively. If one car takes 2 hours lesser time than the other car for the journey, then the distance between City A and City B?

A 270 km

B 324 km

C 405 km

D 216 km

Answer: A

Explanation:

Let the distance between City A and City B =  $d$  km

Speed of first car = 60 km/hr and speed of second car = 108 km/hr

Let time taken by first car =  $t$  hrs and time taken by second car =  $(t - 2)$  hrs

Using, speed = distance/time for first car :

$$\Rightarrow \frac{d}{t} = 60$$

$$\Rightarrow d = 60t \text{ -----(i)}$$

For second car,  $\Rightarrow \frac{d}{t-2} = 108$

Substituting value of  $d$  from equation (i), we get :

$$\Rightarrow 60t = 108t - 216$$

$$\Rightarrow 108t - 60t = 48t = 216$$

$$\Rightarrow t = \frac{216}{48} = 4.5 \text{ hrs}$$

From equation (i),  $\Rightarrow d = 60 \times 4.5 = 270$  km

$\Rightarrow$  Ans - (A)

## SSC CGL Previous Papers (DOWNLOAD PDF)

### Question 89

If  $(4x - 5) = (3x - 1)$ , then the numerical value of  $(x + 4)^2$  is

- A 16
- B 64
- C 32
- D 8

**Answer: B**

### Explanation:

Given :  $(4x - 5) = (3x - 1)$

$$\Rightarrow 4x - 3x = 5 - 1$$

$$\Rightarrow x = 4$$

To find :  $(x + 4)^2$

$$= (4 + 4)^2 = 8^2 = 64$$

$\Rightarrow$  Ans - (B)

### Question 90

A does 50% of a work in 12 days. He then calls in B and they together finish the remaining work in 8 days. How long B alone would take to complete the whole work?

- A 12 days
- B 24 days
- C 36 days
- D 48 days

**Answer: D**

### Explanation:

Let total work to be done = 96 units

$$\text{Work done by A in 12 days} = \frac{50}{100} \times 96 = 48 \text{ units}$$

$$\text{A's efficiency} = \frac{48}{12} = 4 \text{ units/day}$$

$$\text{Remaining work} = 96 - 48 = 48 \text{ units}$$

$$\text{Let B's efficiency} = x \text{ units/day}$$

Now, A and B complete remaining work in 8 days

$$\Rightarrow (4 + x) \times 8 = 48$$

$$\Rightarrow 4 + x = \frac{48}{8} = 6$$

$$\Rightarrow x = 6 - 4 = 2$$

$$\therefore \text{Time taken by B to complete the whole work alone} = \frac{96}{2} = 48 \text{ days}$$

$\Rightarrow$  Ans - (D)

**Question 91**

Divide 32 into two parts such that the sum of the square of the parts is 674. What is the value of the parts?

- A 22, 10
- B 30, 2
- C 25, 7
- D 20, 12

**Answer:** C

**Explanation:**

Let the first part =  $x$  and second part =  $(32 - x)$

According to ques,  $\Rightarrow (x)^2 + (32 - x)^2 = 674$

$$\Rightarrow x^2 + (x^2 + 1024 - 64x) = 674$$

$$\Rightarrow 2x^2 - 64x + 1024 - 674 = 0$$

$$\Rightarrow x^2 - 32x + 175 = 0$$

$$\Rightarrow x^2 - 25x - 7x + 175 = 0$$

$$\Rightarrow x(x - 25) - 7(x - 25) = 0$$

$$\Rightarrow (x - 25)(x - 7) = 0$$

$$\Rightarrow x = 25, 7$$

$\Rightarrow$  Ans - (C)

## SSC CGL Free Mock Test (Latest Pattern)

**Question 92**

The average revenues of 13 consecutive years of a company is Rs 78 lakhs. If the average of first 7 years is Rs 73 lakhs and that of last 7 years is Rs 85 lakhs, what is the revenue for the 7th year?

- A Rs 94 lakhs
- B Rs 90 lakhs
- C Rs 88 lakhs
- D Rs 92 lakhs

**Answer:** D

**Explanation:**

Total revenues of 13 years of the company =  $78 \times 13 = \text{Rs. } 1014$  lakhs

Total revenue of first 7 years =  $73 \times 7 = \text{Rs. } 511$  lakhs

Total revenue of last 7 years =  $85 \times 7 = \text{Rs. } 595$  lakhs

$\therefore$  Revenue of 7th year =  $(511 + 595) - 1014 = 1106 - 1014$

= Rs. 92 lakhs

$\Rightarrow$  Ans - (D)

**Question 93**

In what ratio is the segment joining the points (2,5) and (6,10) divided by the y-axis?



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

**Answer: B**

**Explanation:**

Using section formula, the coordinates of point that divides line joining  $A = (x_1, y_1)$  and  $B = (x_2, y_2)$  in the ratio  $a : b$

$$= \left( \frac{ax_2 + bx_1}{a+b}, \frac{ay_2 + by_1}{a+b} \right)$$

Let the ratio in which the segment joining (2,5) and (6,10) divided by the y-axis =  $k : 1$

Since, the line segment is divided by y-axis, thus x coordinate of the point will be zero, let the point of intersection =  $(0, y)$

Now, point P (0,y) divides (2,5) and (6,10) in ratio =  $k : 1$

$$\Rightarrow 0 = \frac{(6 \times k) + (2 \times 1)}{k+1}$$

$$\Rightarrow 6k + 2 = 0$$

$$\Rightarrow k = \frac{-2}{6} = \frac{-1}{3}$$

$\therefore$  Line segment joining (2,5) and (6,10) is divided by the Y axis in the ratio =  $1 : 3$  externally

$\Rightarrow$  Ans - (B)

**Question 94**

**A wholesaler sells a watch to a retailer at a profit of 25% and the retailer sells it to a customer at a loss of 12%. If the customer pays Rs 1045, what had it cost the wholesaler?**

- A Rs 950
- B Rs 1149
- C Rs 1244
- D Rs 751

**Answer: A**

**Explanation:**

For the wholesaler,

Let the cost price = Rs.  $100x$

With profit of 25%, Selling price =  $\frac{125}{100} \times 100x = Rs.125x$

For the retailer,

Cost price = Rs.  $125x$

With a loss of 12%, Selling price =  $\frac{88}{100} \times 125x = Rs.110x$

For the customer,

Cost price =  $110x = 1045$

$$\Rightarrow x = \frac{1045}{110} = \frac{95}{10} = 9.5$$

$\therefore$  Cost price for retailer =  $100 \times 9.5 = Rs.950$

$\Rightarrow$  Ans - (A)

## SSC CHSL Important Questions and Answers (Download PDF)

### Question 95

A bank offers 5% compound interest per half year. A customer deposits Rs 4800 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by way of interest?

- A Rs 732
- B Rs 1464
- C Rs 366
- D Rs 183

**Answer: A**

### Explanation:

The interest earned on 4800 from Jan to July will be  $4800 \times 5 \times \frac{1}{100}$  (Since rate of interest is 5 % per 6 months)  
 $= 48 \times 5 = 240$

Hence, 4800 will amount to 5040. He adds another 4800 to this. So the net amount becomes  $5040 + 4800 = 9,840$ .

Now interest earned on this amount in a period of 6 months will be  $9840 \times 5 \times \frac{1}{100} = 492$

So the final amount will be  $9840 + 492 = 10332$

Total money he deposited =  $4800 + 4800 = 9600$

Hence, amount earned via interest =  $10332 - 9600 = 732$

=> Ans - (A)

### Question 96

If the sum of the measures of all the interior angles of polygon is  $2340^\circ$ . What is the number of sides of the polygon?

- A 13
- B 15
- C 17
- D 11

**Answer: B**

### Explanation:

Let number of sides of the polygon =  $n$

Sum of all interior angles of a polygon having  $n$  sides =  $(n - 2) \times 180^\circ = 2340^\circ$

$$\Rightarrow (n - 2) = \frac{2340}{180} = 13$$

$$\Rightarrow n = 13 + 2 = 15$$

$\therefore$  The polygon having sum of interior angles  $2340^\circ$  has 15 sides

=> Ans - (B)

### Question 97

If  $\frac{(1+\sec A)}{\tan A} = x$ , then  $x$  is

- A  $\cot(A/2)$

- B  $\tan(A/2)$   
 C  $\operatorname{cosec}(A/2)$   
 D  $\sec(A/2)$

Answer: A

Explanation:

Using double angle formula, we know that  $\cos(2\theta) = \cos^2\theta - \sin^2\theta$

$$\Rightarrow \cos(2\theta) = (1 - \sin^2\theta) - \sin^2\theta$$

$$\Rightarrow \cos(2\theta) = 1 - 2\sin^2\theta$$

Replacing  $\theta$  by  $\frac{A}{2}$ , we get :

$$\Rightarrow \cos A = 1 - 2\sin^2\left(\frac{A}{2}\right)$$

$$\Rightarrow 2\sin^2\left(\frac{A}{2}\right) = 1 - \cos A$$

$$\Rightarrow \sin^2\left(\frac{A}{2}\right) = \frac{(1 - \cos A)}{2}$$

$$\Rightarrow \sin\left(\frac{A}{2}\right) = \sqrt{\frac{(1 - \cos A)}{2}}$$

$$\text{Similarly, } \Rightarrow \cos\left(\frac{A}{2}\right) = \sqrt{\frac{(1 + \cos A)}{2}}$$

Now, to find:  $\cot\left(\frac{A}{2}\right)$

$$= \cos\left(\frac{A}{2}\right) \div \sin\left(\frac{A}{2}\right)$$

$$= \sqrt{\frac{(1 + \cos A)}{2}} \div \sqrt{\frac{(1 - \cos A)}{2}}$$

$$= \sqrt{\frac{(1 + \cos A)}{2}} \times \sqrt{\frac{2}{(1 - \cos A)}}$$

$$= \sqrt{\frac{1 + \cos A}{1 - \cos A}}$$

$$= \sqrt{\frac{1 + \cos A}{1 - \cos A} \times \frac{1 + \cos A}{1 + \cos A}}$$

$$= \sqrt{\frac{(1 + \cos A)^2}{1 - \cos^2 A}} = \sqrt{\frac{(1 + \cos A)^2}{\sin^2 A}}$$

$$= \frac{1 + \cos A}{\sin A}$$

Divide both numerator and denominator by  $(\cos A)$

$$= \frac{1 + \sec A}{\tan A}$$

$\Rightarrow$  Ans - (A)

## SSC CHSL Study Material

Question 98

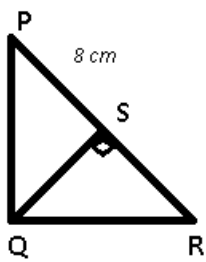
$\Delta PQR$  is right angled at Q. QS is the altitude. PQ is  $4\sqrt{13}$  cm and PS is 8 cm. What is the length of SR?

- A  $6\sqrt{13}$  cm  
 B  $4\sqrt{13}$  cm  
 C 18 cm

D 9 cm

Answer: C

Explanation:



Given :  $PQ = 4\sqrt{13}$  cm and  $PS = 8$  cm

$$\text{In } \triangle PQS, \Rightarrow (PQ)^2 = (PS)^2 + (QS)^2$$

$$\Rightarrow (4\sqrt{13})^2 = (8)^2 + (QS)^2$$

$$\Rightarrow (QS)^2 = 208 - 64 = 144$$

$$\Rightarrow (QS) = \sqrt{144} = 12 \text{ cm}$$

Let  $SR = x$  cm

$$\text{Using, } (QS)^2 = (PS) \times (SR)$$

$$\Rightarrow (12)^2 = 8 \times x$$

$$\Rightarrow x = \frac{144}{8} = 18 \text{ cm}$$

$\Rightarrow$  Ans - (C)

**Question 99**

What are the roots of the quadratic equation:  $x^2 + 3x - 154 = 0$

A 21, 14

B 11, -14

C 14, -11

D 14, 22

Answer: B

Explanation:

$$\text{Equation : } x^2 + 3x - 154 = 0$$

$$\Rightarrow x^2 + 14x - 11x - 154 = 0$$

$$\Rightarrow x(x + 14) - 11(x + 14) = 0$$

$$\Rightarrow (x + 14)(x - 11) = 0$$

$$\Rightarrow x = -14, 11$$

$\Rightarrow$  Ans - (B)

**Question 100**

If a cylinder of radius 4.3 cm and height 4.8 cm is melted and constructed into a cone of the same radius, what will be the height of this cone? (Use  $\pi = 22/7$ )

A 28.8 cm

B 14.4 cm

- C 7.2 cm  
D 21.6 cm

**Answer: B**

**Explanation:**

Radius of cylinder,  $R = 4.3$  cm and height of cylinder,  $H = 4.8$  cm

Let height of cone =  $h$  cm and radius of cone,  $r = 4.3$  cm

According to ques, volume of cone = volume of cylinder

$$\Rightarrow \frac{1}{3} \pi r^2 h = \pi R^2 H$$

$$\Rightarrow \frac{1}{3} \times (4.3)^2 \times h = (4.3)^2 \times 4.8$$

$$\Rightarrow h = 4.8 \times 3 = 14.4 \text{ cm}$$

$\Rightarrow$  Ans - (B)

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