



SSC CHSL 11 Jan 2017 Afternoon 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. Rabi Crop : Oat :: Kharif Crop : ?

- A Mustard
- B Wheat
- C Barley
- D Paddy

Answer: D

Explanation:

Expression = Rabi Crop : Oat :: Kharif Crop : ?

Oat (cereals) comes under the category of Rabi crops, and among the given options *paddy* is a Kharif Crop.

=> Ans - (D)

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Question 2

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

CM : P :: PM : ?

- A F
- B E
- C D
- D C

Answer: D

Explanation:

Expression = CM : P :: PM : ?

The pattern followed is :

(3) (13) (16) (16) (13) (3 or 29)

C M → P P M → C

Thus, PM : C

=> Ans - (D)

Question 3

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

JN : TB :: PB : ?

A TD

B FD

C RS

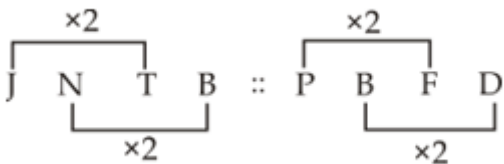
D TV

Answer: B

Explanation:

Expression = JN : TB :: PB : ?

The pattern followed is that the numerical value of the alphabets is multiplied by 2.



Thus, PB : FD

=> Ans - (B)

Question 4

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

7 : 56 :: 9 : ?

A 65

B 90

C 81

D 70

Answer: B

Explanation:

Expression = $7 : 56 :: 9 : ?$

The pattern followed is $= x : x(x + 1)$

Eg :- $7 : 7(7 + 1) = 7 : 56$

Similarly, $9 \times (9 + 1) = 9 \times 10 = 90$

=> Ans - (B)

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Question 5

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

- A Banyan
- B Pine
- C Spruce
- D Fir

Answer: A

Explanation:

Except Banyan other three belong to the pinaceae family, i.e. tree and shrubs, hence Banyan is the odd one.

=> Ans - (A)

Question 6

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

- A MG
- B QK
- C VN
- D UO

Answer: C

Explanation:

(A) : M (-6 letters) = G

(B) : Q (-6 letters) = K

(C) : V (-8 letters) = N

(D) : U (-6 letters) = O

=> Ans - (C)

Question 7

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

A 4267

B 2498

C 2739

D 5496

Answer: B

Explanation:

The product of last digits is equal to the first two digits, but $9 \times 8 \neq 24$, hence 2498 is the odd one out.

=> Ans - (B)

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Question 8

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

A 8912

B 3469

C 5555

D 6734

Answer: B

Explanation:

The sum of digits of the numbers is 20, but $3 + 4 + 6 + 9 = 22$, hence 3469 is the odd one out.

=> Ans - (B)

Question 9

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. Troposphere, Stratosphere, Mesosphere, ?

A Exosphere

B Thermosphere

- C Tropopause
- D Ozone Layer

Answer: B

Explanation:

Layers of earth's atmosphere (inner to outer).

= Troposphere -> Stratosphere -> Mesosphere -> Thermosphere

=> Ans - (B)

Question 10

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. AZ, BY, CX, ?

- A WD
- B DW
- C DE
- D DX

Answer: B

Explanation:

Expression : AZ, BY, CX, ?

The pattern followed in each letters of the terms is :

1st letter : A (+1 letter) = B (+1 letter) = C (+1 letter) = D

2nd letter : Z (-1 letter) = Y (-1 letter) = X (-1 letter) = W

Thus, missing term = **DW**

=> Ans - (B)

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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. DM, EN, FO, ?

- A FG
- B HI

C GP

D HP

Answer: C

Explanation:

Expression : DM, EN, FO, ?

The pattern followed in each letter of the terms is :

1st letter : D (+1 letter) = E (+1 letter) = F (+1 letter) = G

2nd letter : M (+1 letter) = N (+1 letter) = O (+1 letter) = P

Thus, missing term = **GP**

=> Ans - (C)

Question 12

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

79, 159, 199, 219, ?

A 229

B 234

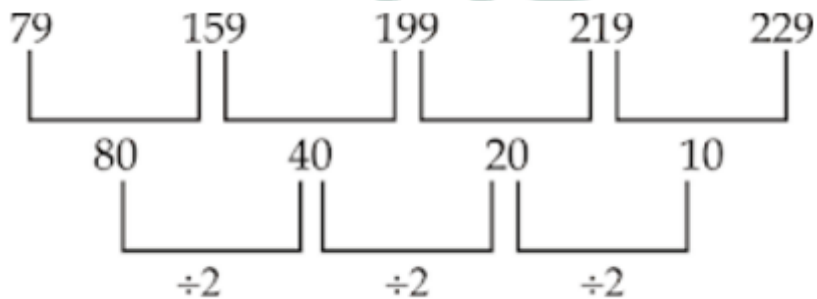
C 239

D 222

Answer: A

Explanation:

The pattern followed is :



Missing number = 229

=> Ans - (A)

Question 13

In the following question, two statements are given each followed by two conclusions I and II. You have to consider the statements 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) Some polynomials are linear equations.

(II) Some linear equations are quadratic.

Conclusion:

(I) Polynomials are quadratic.

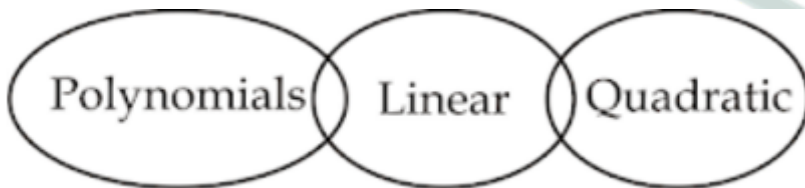
(II) Linear equations are quadratic.

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

Answer: C

Explanation:

The venn diagram for above statements is :



Conclusion:

(I) Polynomials are quadratic = false

(II) Linear equations are quadratic = false

Thus, neither I nor II follows

=> Ans - (C)

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Question 14

The age of A is three times the age of B. What is the ratio of the age of B to the age of A?

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

D 3:1

Answer: A

Explanation:

Let B's age = x years

=> A's age = $3x$ years

∴ Ratio of the age of B to the age of A = $\frac{x}{3x} = 1 : 3$

=> Ans - (A)

Question 15

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

- i. Attribute
- ii. Attenuation
- iii. Attain
- iv. Attention

A iii, iv, ii, i

B iv, i, iii, ii

C i, iii, ii, iv

D i, ii, iii, iv

Answer: A

Explanation:

As per the order of dictionary :

= Attain -> Attention -> Attenuation -> Attribute

≡ iii, iv, ii, i

=> Ans - (A)

Question 16

In a certain code language, "FAILURE" is written as "FRULIAG". How is "SUCCESS" written in that code language?

A TSECCUT

B SSECCUS

C TSECCUS

D TSECCUU

Answer: A

Explanation:

"FAILURE" is written as "FRULIAG"

The pattern followed is :



Similarly, for SUCCESS :



=> Ans - (A)

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Question 17

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

?	113	161
2	7	6
3	4	5

A 31

B 36

C 280

D 161

Answer: A

Explanation:

In each column, the first number is obtained by adding the cube of last number and square of second number.

$$\text{Eg :- } 4^3 + 7^2 = 64 + 49 = 113$$

$$5^3 + 6^2 = 125 + 36 = 161$$

$$\text{Similarly, } 3^3 + 2^2 = 27 + 4 = 31$$

=> Ans - (A)

Question 18

If "A" denotes "added to", "B" denotes "divided by", "C" denotes "multiplied by" and "D" denotes "subtracted from", then $154 \text{ B } 11 \text{ C } 6 \text{ A } 6 \text{ D } 27 = ?$

A 60

B 63

C 33

D 64

Answer: B

Explanation:

Expression : $154 \text{ B } 11 \text{ C } 6 \text{ A } 6 \text{ D } 27 = ?$

$$\equiv 154 \div 11 \times 6 + 6 - 27$$

$$= (14 \times 6) - 21$$

$$= 84 - 21 = 63$$

=> Ans - (B)

Question 19

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

A trts

B rtst

C trst

D tsss

Answer: C

Explanation:

The pattern followed is that in groups of 3, the terms 'str' and its reverse are alternatively repeated

= str rts str

=> Ans - (C)

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Question 20

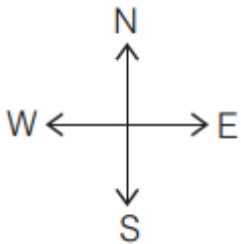
In a compass, west direction is shown as south. As per the compass, which direction should a man go to, if he wishes to move towards the east?

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

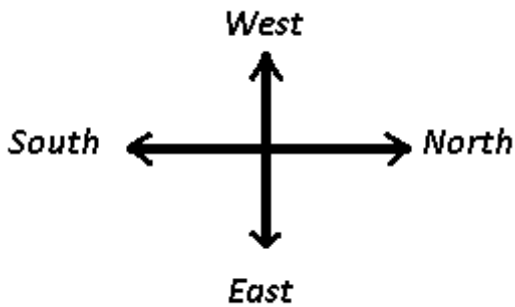
Answer: A

Explanation:

Directions in a normal compass :



In the given compass, west direction is shown as south, thus the compass is aligned 90° to the right :



Thus, the man should go towards north if he wishes to move towards east.

=> Ans - (A)

Question 21

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example, 'I' can be represented by 32, 42 etc. and 'M' can be represented by 88, 68 etc. Similarly, you have to identify the set for the word 'GAIN'.

	0	1	2	3	4
0	A	N	H	H	E
1	D	A	N	L	I
2	E	G	A	N	E
3	E	L	F	A	N
4	L	G	F	N	E

	5	6	7	8	9
5	I	R	B	T	O
6	R	I	T	M	S
7	R	T	G	I	O
8	T	S	G	M	I
9	S	T	G	M	O

- A 21, 00, 89, 44
- B 77, 22, 66, 43
- C 87, 33, 23, 12
- D 97, 11, 88, 01

Answer: B

Explanation:

- (A) : 21, 00, 89, 44 = GAIE
- (B) : 77, 22, 66, 43 = **GAIN**
- (C) : 87, 33, 23, 12 = GANN
- (D) : 97, 11, 88, 01 = GAMN

=> Ans - (B)

Question 22

Akhil is the maternal uncle of Rashmi. Rashmi is the daughter of Ramesh. How is Ramesh related to Akhil?

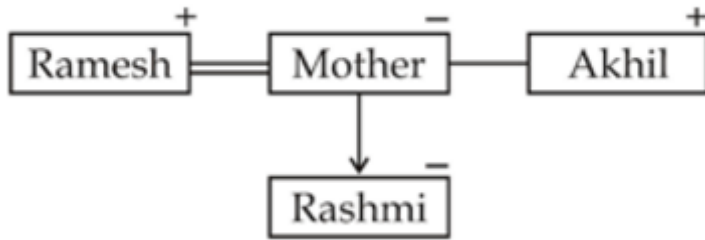
- A Brother-in-law
- B Brother
- C Father
- D Cousin

Answer: A

Explanation:

Akhil is the maternal uncle of Rashmi. Rashmi is the daughter of Ramesh.

Relation is :



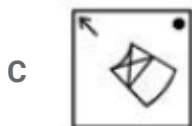
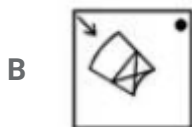
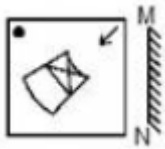
Thus, Ramesh is brother-in-law of Akhil.

=> Ans - (A)

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Question 23

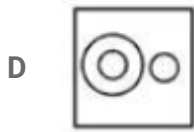
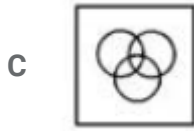
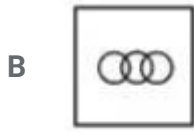
If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure ?



Answer: D

Question 24

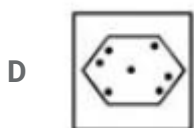
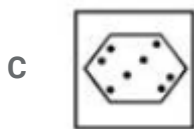
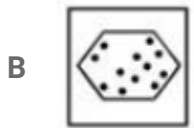
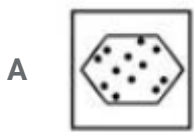
Identify the diagram that best represents the relationship among the given classes. Primary colors, Red, Blue, Magenta



Answer: B

Question 25

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



Answer: A

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General Awareness

Instructions

For the following questions answer them individually

Question 26

Which of the following is also known as the brain of the computer?

- A CPU
- B ALU
- C Motherboard
- D Keyboard

Answer: A

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Question 27

Soda water was invented by

- A Tivadar Puskas
- B Joseph Priestley
- C Petrache Poenaru
- D James Leonard Plimpton

Answer: B

Question 28

The outermost layer of skin is

- A Epidermis
- B Dermis
- C Tissues

D Hypodermis

Answer: A

Question 29

Which plants have root nodules?

A Leguminous plants

B Parasitic plants

C Epiphytic Plants

D Aquatic Plants

Answer: A

SSC CPO Free Mock Test (Latest Pattern)

Question 30

Earth-worms belongs to the phylum

A Protozoa

B Cnidaria

C Annelida

D Mollusca

Answer: C

Question 31

The mass of proton and mass of which atomic particle is same?

A Neutron

B Electron

C Isoprone

D Alpha particle

Answer: A

Question 32

Using which of the following processes can one separate a solute from its solution?

- A Sedimentation
- B Evaporation
- C Filtration
- D Condensation

Answer: B

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Question 33

Jantar Mantar is in

- A Rajasthan
- B Assam
- C Bihar
- D Gujarat

Answer: A

Question 34

Salzburg Festival is held in which country?

- A Italy
- B Austria
- C Australia
- D Spain

Answer: B

Question 35

If price of an article decreases from Rs. 25 to Rs. 20, quantity demanded increases from Q1 units to 1500 units. If point elasticity of demand is -1.25, find Q1?

- A 900 units
- B 1200 units
- C 1800 units
- D 2000 units

Answer: B

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Question 36

Birth rate in a country is defined as

- A Number of births per 100 in 1 year
- B Number of births per 1000 in 1 year
- C Number of births per km of area in 1 year
- D Number of births per 100 km of area in 1 year

Answer: B

Question 37

Where is "The Geysers", the world's largest geothermal field, containing a complex of 22 geothermal power plants, located?

- A Rio
- B New Orleans
- C Moscow
- D San Francisco

Answer: D

Question 38

Bauxite is an ore/mineral of

- A Aluminium
- B Beryllium

C Lead

D Tin

Answer: A

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Question 39

The real name of Dilip Kumar is

A Yusuf Khan

B Dilip Kumar

C Mohammad Kaif

D Ravi Bajaj

Answer: A

Question 40

The Gobi Desert is one of the largest deserts on Earth. A major part of it lies in which country?

A Australia

B Saudi Arabia

C Mongolia

D Madagascar

Answer: C

Question 41

Which is the largest continent in the world?

A Africa

B North America

C South America

D Asia

Answer: D

SSC CHSL Syllabus

Question 42

Aurangzeb put his fatherunder house arrest in Agra Fort.

- A Humayun
- B Shah Jahan
- C Akbar
- D Bahadur Shah

Answer: B

Question 43

The English defeated whom in the battle of Wandiwash?

- A German
- B French
- C Indians
- D Americans

Answer: B

Question 44

Pulitzer prize is given in the field of

- A Journalism
- B Sports
- C Medicine
- D Music

Answer: A

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Question 45

What is the unit of electric resistance?

- A Dyne
- B Pascal
- C Joule
- D Ohms

Answer: D

Question 46

Who invented Television?

- A J L Baird
- B Aristotle
- C James Clerk Maxwell
- D Nikola Tesla

Answer: A

Question 47

How many members of the Rajya Sabha are elected every two years?

- A all
- B one fourth
- C half
- D one third

Answer: B

SSC CHSL Study Material

Question 48

The Indian Constitution declares India as all of the following, except

- A communist
- B democratic republic
- C socialist
- D secular

Answer: A

Question 49

Shaquille O'Neal is associated with which Sport?

- A Lawn Tennis
- B Basketball
- C Formula One
- D WWE

Answer: B

Question 50

Ramcharitmanas is an epic poem written in which language?

- A Santali
- B Munda
- C Awadhi
- D Sanskrit

Answer: C

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English

Instructions

For the following questions answer them individually

Question 51

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

Tie the knot

- A To put yourself into a problem
- B To make fateful decision
- C To sign the deal
- D To get married

Answer: D

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Question 52

Select the synonym of carnal

- A chaste
- B sensual
- C decent
- D spiritual

Answer: B

Question 53

Select the antonym of intrinsic

- A elemental
- B innate
- C connate
- D acquired

Answer: D

Question 54

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

Providence smilesthose who are diligent.

- A with
- B in
- C upon
- D over

Answer: C

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Question 55

Select the word with the correct spelling.

- A chaastity
- B marothon
- C reasert
- D toxicity

Answer: D

Question 56

Improve the bracketed part of the sentence.

When I last saw Ravi, he (had been running) to catch his bus.

- A ran
- B was running
- C had run
- D no improvement

Answer: B

Question 57

In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.
If you are in the wrong gears (A)/the car won't be (B)/able to climb the hill.(C)/No error(D)

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

Answer: A

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Question 58

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

The ball is in your court

- A It is up to you to make the next move
- B You have got a fantastic opportunity
- C You will be blamed for crimes that you have not committed
- D You have been put into a dilemma.

Answer: A

Question 59

Improve the bracketed part of the sentence.

I would love (to availing) a short holiday, and go for an overnight trek.

- A to avail myself of
- B to avail of
- C to avail myself
- D no improvement

Answer: C

Question 60

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.
Mariam was writing a note to her boss.

- A A note was written to her boss by Mariam.
- B A note was wrote by Mariam to her boss.
- C A note was being written by Mariam to her boss.
- D A note was written by Mariam to her boss.

Answer: C

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Question 61

Select the synonym of incinerate

- A parch
- B moderate
- C ignite
- D quench

Answer: C

Question 62

Select the antonym of ogle

- A leer
- B gaze
- C ignore
- D gawk

Answer: C

Question 63

Select the word with the correct spelling.

- A snatched
- B litigat
- C abhored
- D variably

Answer: A

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Question 64

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

To harass someone persistently to do something.

- A Iconoclast
- B Dote
- C Neurotic
- D Importune

Answer: D

Question 65

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

The baby looked.....the toffee with greedy eyes.

- A upon
- B into
- C on
- D at

Answer: D

Question 66

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

A short statement expressing a general truth.

- A Maxim
- B Infer
- C Drum
- D Pander

Answer: A

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Question 67

Rearrange the parts of the sentence in correct order.

It is a truth universally

P-acknowledged that a single

Q-man in possession of a good

R-fortune must be in want of a wife

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

Answer: B

Question 68

Rearrange the parts of the sentence in correct order.

Your absence has

P-gone through me Q-through a needle R-like thread

- A PRQ
- B PQR
- C QPR

D RPQ

Answer: A

Question 69

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'.

This is the sports person(A)/whom I think has won(B)/the much coveted prize.(C)/ No error(D)

A A

B B

C C

D D

Answer: B

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Question 70

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.

Abhay said to Veena, " Are you coming to the Reception?"

A Abhay told Veena if she was coming to the Reception.

B Abhay asked Veena if she will be coming to the Reception.

C Abhay asked Veena if she was coming to the Reception.

D Abhay asked Veena whether she was coming to the Reception.

Answer: C

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.

In view of last year's H1N1 attack and prevailing(1).....weather conditions, the health department officials(2).....that the virus will turn more active by January end. In-charge, Integrated Disease(3).....Programme (IDSP), Dr Shah, said, "Virus is still active, but not in a major way. In coming months, it is likely to become more active. Last year too, virus had claimed lives in January and February. Therefore, we are(4).....as coming months might(5).....a challenge."

Question 71

(1)

- A erratic
- B weird
- C dicey
- D unstable

Answer: A

Question 72

(2)

- A expect
- B expects
- C were expecting
- D are expecting

Answer: D

SSC Stenographer Previous Papers (Latest Pattern)

Question 73

(3)

- A management
- B control
- C surveillance
- D eradication

Answer: C

Question 74

(4)

- A vigilant
- B open to
- C on toes
- D impulsive

Answer: A

Question 75

(5)

- A show
- B pose
- C throw
- D put up

Answer: B

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Mathematics

Instructions

For the following questions answer them individually

Question 76

Mehdi can complete a work in 25 hours. If he is joined by Jahnvi who is 50% more efficient, in what time will they together finish the work?

- A 12 hours
- B 10 hours
- C 3 hours
- D 9 hours

Answer: B

Explanation:

Let total work to be done = 50 units

Mehdi's efficiency = $\frac{50}{25} = 2$ units/hr

Jahnvi is 50% more efficient than Mehdi, \Rightarrow Jahnvi's efficiency = $\frac{150}{100} \times 2 = 3$ units/hr

\Rightarrow Mehdi and Jahnvi 1 day's work = $2 + 3 = 5$ units/hr

\therefore Time taken by them to finish the work together = $\frac{50}{5} = 10$ hours

\Rightarrow Ans - (B)

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Question 77

If $x + 3 \leq 4x + 4$ and $3(4 - x) - 4 \geq 2x - 2$, then x can take which of the following values?

A 1

B 3

C -1

D -3

Answer: A

Explanation:

Expression 1 : $x + 3 \leq 4x + 4$

$$\Rightarrow 4x - x \geq 3 - 4$$

$$\Rightarrow 3x \geq -1$$

$$\Rightarrow x \geq \frac{-1}{3} \text{ -----(i)}$$

Expression 2 : $3(4 - x) - 4 \geq 2x - 2$

$$\Rightarrow 12 - 3x - 4 \geq 2x - 2$$

$$\Rightarrow 2x + 3x \leq 8 + 2$$

$$\Rightarrow 5x \leq 10$$

$$\Rightarrow x \leq 2 \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $\frac{-1}{3} \leq x \leq 2$

The only value that x can take among the options = 1

\Rightarrow Ans - (A)

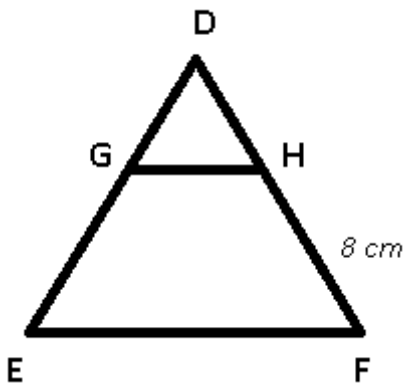
Question 78

In $\triangle DEF$, G and H are points on side DE and DF respectively. GH is parallel to EF. If G divides DE in the ratio 3:2 and HF is 8 cm, then the length of DF is

- A 12 cm
- B 20 cm
- C 14 cm
- D 16 cm

Answer: B

Explanation:



GH is parallel to EF and G divides DE in the ratio 3:2

Let $DG = 3x$ cm and $GE = 2x$ cm and $HF = 8$ cm

$$\Rightarrow \frac{DG}{GE} = \frac{DH}{HF}$$

$$\Rightarrow \frac{3x}{2x} = \frac{DH}{8}$$

$$\Rightarrow DH = \frac{8 \times 3}{2} = 12 \text{ cm}$$

$$\therefore DF = DH + HF = 12 + 8 = 20 \text{ cm}$$

\Rightarrow Ans - (B)

Question 79

Common factor of $12a^4b^6$, $18a^6c^2$, $36a^2b^2$ is

- A $36a^2$
- B $108b^2$
- C $6a^2b^2$
- D $6a^2$

Answer: D

Explanation:

Factors of :

$$12a^4b^6 = (2 \times 6) \times (a^2 \times a^2) \times b^6$$

$$18a^6c^2 = (3 \times 6) \times (a^2 \times a^4) \times c^2$$

$$36a^2b^2 = (6 \times 6) \times (a^2) \times b^2$$

The common factor in the 3 terms = $6a^2$

=> Ans - (D)

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Question 80

The total surface area of a hemisphere is 462 sq cm, what is its curved surface area? (Take $\pi = 22/7$)

A 616 sq cms

B 154 sq cms

C 308 sq cms

D 462 sq cms

Answer: C

Explanation:

Let radius of hemisphere = r cm

$$\text{Total surface area of hemisphere} = 3\pi r^2 = 462 \text{ -----(i)}$$

Multiplying equation (i) by $\frac{2}{3}$

$$\Rightarrow \frac{2}{3} \times 3\pi r^2 = \frac{2}{3} \times 462$$

$$\Rightarrow \text{Curved Surface area of hemisphere} = 2\pi r^2 = 2 \times 154 = 308 \text{ cm}^2$$

=> Ans - (C)

Question 81

The average revenues of 11 consecutive years of a company is Rs 69 lakhs. If the average of first 6 years is Rs 64 lakhs and that of last 6 years is Rs 76 lakhs, what is the revenue for the 6th year?

A Rs 83 lakhs

B Rs 79 lakhs

C Rs 77 lakhs

D Rs 81 lakhs

Answer: D

Explanation:

Total revenues of 11 years of the company = $69 \times 11 = \text{Rs. } 759$ lakhs

Total revenue of first 6 years = $64 \times 6 = \text{Rs. } 384$ lakhs

Total revenue of last 6 years = $76 \times 6 = \text{Rs. } 456$ lakhs

\therefore Revenue of 6th year = $(384 + 456) - 759 = 840 - 759$

= Rs. 81 lakhs

=> Ans - (D)

Question 82

One of the internal angle of a rhombus is 60° and length of its shorter diagonal is 8 cm. What is the area of the rhombus?

A $64\sqrt{63} \text{ sqcm}$

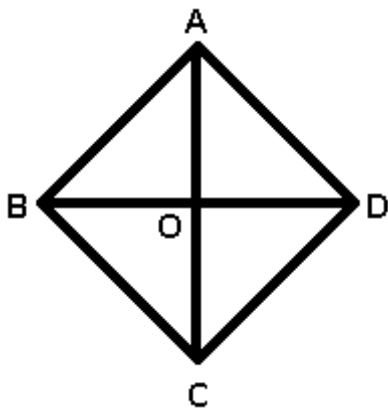
B $32\sqrt{2} \text{ sqcm}$

C $64\sqrt{2} \text{ sqcm}$

D $32\sqrt{3} \text{ sqcm}$

Answer: D

Explanation:



Let $\angle A = 60^\circ$ and BD be the shorter diagonal = 8 cm

The diagonals of a rhombus bisect each other at right angle and also bisect the angles of rhombus.

=> $\angle OAD = 30^\circ$ and $OD = 4$ cm

In $\triangle OAD$, $\tan(\angle OAD) = \frac{OD}{OA}$

=> $\tan(30) = \frac{4}{OA}$

=> $\frac{1}{\sqrt{3}} = \frac{4}{OA}$

=> $OA = 4\sqrt{3}$

Thus, $AC = 2 \times 4\sqrt{3} = 8\sqrt{3}$ cm

$$\begin{aligned} \therefore \text{Area of rhombus} &= \frac{1}{2} \times (\text{product of diagonals}) \\ &= \frac{1}{2} \times (AC) \times (BD) \\ &= \frac{1}{2} \times 8\sqrt{3} \times 8 \\ &= 32\sqrt{3} \text{ cm}^2 \\ \Rightarrow \text{Ans - (D)} \end{aligned}$$

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Question 83

When a discount of 20% is given on a movie ticket, the profit is 34%. If the discount is 15%, then the profit is

- A 49 percent
- B 42.375 percent
- C 55.625 percent
- D 35.75 percent

Answer: B

Explanation:

Let marked price of monthly train pass = Rs. 100

When discount of 20% is given, \Rightarrow Selling price of ticket = $\frac{(100-20)}{100} \times 100 = \text{Rs.}80$

Let cost price = $\text{Rs.}x$

$$\Rightarrow \text{Profit \%} = \frac{80-x}{x} \times 100 = 34$$

$$\Rightarrow \frac{80-x}{x} = \frac{34}{100} = \frac{17}{50}$$

$$\Rightarrow 4000 - 50x = 17x$$

$$\Rightarrow 17x + 50x = 67x = 4000$$

$$\Rightarrow x = \frac{4000}{67} = \text{Rs. } 59.70$$

If discount is 15%, \Rightarrow Selling price = $\frac{(100-15)}{100} \times 100 = \text{Rs.}85$

$$\Rightarrow \text{Profit \%} = \frac{85-59.70}{59.70} \times 100$$

$$= \frac{2530}{59.70} \approx 42.375\%$$

\Rightarrow Ans - (B)

Question 84

The price of an article is cut by 7%, to restore it to its original value, the new price must be increased by

- A 7 percent
- B 33.77 percent
- C 7.53 percent
- D 63.75 percent

Answer: C

Explanation:

Let the original price of the article = Rs. 100

If the price is cut by 7%, => New price = $\frac{100-7}{100} \times 100 = Rs.93$

To restore to its original value the new price must be increased by = $\frac{100-93}{93} \times 100$

$$= \frac{700}{93} = 7.526 \approx 7.53\%$$

=> Ans - (C)

Question 85

A bag has Rs12.9 in the form of 1 rupee, 50 paise and 10 paise coins in the ratio of 3:2:3. How many 50 paise coins are there in the bag?

- A 9
- B 6
- C 12
- D 3

Answer: B

Explanation:

Let the number of 1-rupee, 50-paise and 10-paise coins be $3x$, $2x$ and $3x$ respectively.

Total amount in the bag = Rs. 12.9

$$\Rightarrow (1 \times 3x) + \left(\frac{50}{100} \times 2x\right) + \left(\frac{10}{100} \times 3x\right) = 12.9$$

$$\Rightarrow 3x + x + \frac{3x}{10} = 12.9$$

$$\Rightarrow \frac{30x+10x+3x}{10} = 12.9$$

$$\Rightarrow 43x = 12.9 \times 10 = 129$$

$$\Rightarrow x = \frac{129}{43} = 3$$

\therefore Number of 50 paise coins = $2x = 2 \times 3 = 6$

=> Ans - (B)

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Question 86

Which of the following equations has the sum of its roots as 11?

A $x^2 - 11x + 18 = 0$

B $x^2 - 7x + 10 = 0$

C $x^2 + 2x - 26 = 0$

D $x^2 + 5x - 6 = 0$

Answer: A

Explanation:

Sum of roots in an equation : $ax^2 + bx + c = 0$ is $-\frac{b}{a}$

(A) : $x^2 - 11x + 18 = 0$

=> Sum of roots = $-\frac{-11}{1} = 11$

(B) : $x^2 - 7x + 10 = 0$

=> Sum of roots = $-\frac{-7}{1} = 7$

(C) : $x^2 + 2x - 26 = 0$

=> Sum of roots = $-\frac{2}{1} = -2$

(D) : $x^2 + 5x - 6 = 0$

=> Sum of roots = $-\frac{5}{1} = -5$

=> Ans - (A)

Question 87

$1/(\sec A + \tan A)$ is equal to

A $\operatorname{cosec} A - \cot A$

B $\sin A - \cos A$

C $\sec A - \tan A$

D $\sin A + \cos A$

Answer: C

Explanation:

Expression : $1/(\sec A + \tan A)$

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

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

Multiplying both numerator and denominator by $(1 - \sin A)$

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

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

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

$$= \sec A - \tan A$$

=> Ans - (C)

Question 88

$\tan(A/2)$ is equal to

- A cosecA + cotA
- B secA - cotA
- C cosecA - cotA
- D secA + cotA

Answer: C

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 θ 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 : $\tan\left(\frac{A}{2}\right)$

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

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

$$\begin{aligned}
&= \sqrt{\frac{(1-\cos A)}{2}} \times \sqrt{\frac{2}{(1+\cos A)}} \\
&= \sqrt{\frac{1-\cos A}{1+\cos A}} \\
&= \sqrt{\frac{1-\cos A}{1+\cos A} \times \frac{1-\cos A}{1-\cos A}} \\
&= \sqrt{\frac{(1-\cos A)^2}{1-\cos^2 A}} = \sqrt{\frac{(1-\cos A)^2}{\sin^2 A}} \\
&= \frac{1-\cos A}{\sin A} = \frac{1}{\sin A} - \frac{\cos A}{\sin A} \\
&= \operatorname{cosec} A - \cot A \\
&\Rightarrow \text{Ans - (C)}
\end{aligned}$$

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Question 89

If $12x = 19^2 - 11^2$, what is the value of x ?

- A 20
- B 17
- C 13
- D 11

Answer: A

Explanation:

Expression : $12x = 19^2 - 11^2$

$$\Rightarrow 12x = (19 - 11)(19 + 11)$$

$$\Rightarrow 12x = (8)(30)$$

$$\Rightarrow x = \frac{8 \times 30}{12}$$

$$\Rightarrow x = 2 \times 10 = 20$$

\Rightarrow Ans - (A)

Question 90

What is the value of $\sec -2\pi/3$?

- A -2
- B 2

C $\frac{2}{\sqrt{3}}$

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

Answer: A

Explanation:

Expression : $\sec -2\pi/3$

$$\because \sec(-x) = \sec(x)$$

$$\Rightarrow \sec\left(\frac{-2\pi}{3}\right) = \sec\left(\frac{2\pi}{3}\right)$$

$$= \sec\left(\pi - \frac{\pi}{3}\right) = -\sec\left(\frac{\pi}{3}\right)$$

$$= -2$$

\Rightarrow Ans - (A)

Question 91

If $(1/4 \text{ of } x) - (4/5 \text{ of } 6/7)$ equals $-9/7$, then value of x is

A -12

B -2.4

C -3.6

D -14

Answer: B

Explanation:

According to ques,

$$\Rightarrow \left(\frac{1}{4} \times x\right) - \left(\frac{4}{5} \times \frac{6}{7}\right) = \frac{-9}{7}$$

$$\Rightarrow \frac{x}{4} - \frac{24}{35} = \frac{-9}{7}$$

$$\Rightarrow \frac{x}{4} = \frac{24}{35} - \frac{9}{7}$$

$$\Rightarrow \frac{x}{4} = \frac{24-45}{35} = \frac{-3}{5}$$

$$\Rightarrow x = \frac{-3}{5} \times 4 = -2.4$$

\Rightarrow Ans - (B)

SSC CHSL Syllabus

Question 92

To cover a distance of 333 km in 2 hours by a car, what should be the average speed of the car (in meter/second)?

- A 166.5
- B 46.25
- C 83.25
- D 92.5

Answer: B

Explanation:

The car covers 333 km in 2 hours

$$\text{Speed of car (in km/hr)} = \frac{333}{2} = 166.5 \text{ km/hr}$$

$$\Rightarrow \text{Speed in m/s} = 166.5 \times \frac{5}{18}$$

$$= 5 \times 9.25 = 46.25 \text{ m/s}$$

\therefore In 1 second, it travels 46.25 metres

\Rightarrow Ans - (B)

Question 93

10% discount is offered on an item. By applying a promo code the customer wins 20% cash back. What is the effective discount?

- A 33.6 percent
- B 30 percent
- C 22 percent
- D 28 percent

Answer: D

Explanation:

Let the marked price of item = Rs. $100x$

$$\text{Amount after 10 \% discount} = 100x - \frac{10}{100} \times 100x$$

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

$$\text{Selling price after 20 \% cashback} = 90x - \frac{20}{100} \times 90x$$

$$= 90x - 18x = \text{Rs. } 72x$$

$$\Rightarrow \text{Total discounted amount} = 100x - 72x = \text{Rs. } 28x$$

$$\therefore \text{Effective discount} = \frac{28x}{100x} \times 100 = 28\%$$

\Rightarrow Ans - (D)

Question 94

ΔABC and ΔDEF are similar triangles. Length of AB is 10 cm and length of the corresponding side DE is 6 cm. What is the ratio of Perimeter of ΔABC to ΔDEF ?

- A 5:3
- B 3:5
- C 25:9
- D 9:25

Answer: A

Explanation:

It is given that $\Delta ABC \sim \Delta DEF$

Also, length of AB = 10 cm and length of the corresponding side DE = 6 cm

=> Ratio of Perimeter of ΔABC : Perimeter of ΔDEF = Ratio of corresponding sides = AB : DE

$$= \frac{10}{6} = \frac{5}{3}$$

\therefore The required ratio is 5 : 3

=> Ans - (A)

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Question 95

A bank offers 20% compound interest per half year. A customer deposits Rs 7600 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained from interest is

- A Rs 9727
- B Rs 2432
- C Rs 4864
- D Rs 1216

Answer: C

Explanation:

The interest earned on 7600 from Jan to July will be $7600 \times 20 \times \frac{1}{100}$ (Since rate of interest is 5 % per 6 months)

$$= 76 \times 20 = 1520$$

Hence, 7600 will amount to 9120. He adds another 7600 to this. So the net amount becomes $9120 + 7600 = 16,720$.

Now interest earned on this amount in a period of 6 months will be $16720 \times 20 \times \frac{1}{100} = 3344$

So the final amount will be $16720 + 3344 = 20064$

Total money he deposited = $7600 + 7600 = 15200$

Hence, amount earned via interest = $20064 - 15200 = \text{Rs. } 4864$

=> Ans - (C)

Question 96

At what point does the line $3x + 2y = -12$ intercept the Y-axis?

A (0,6)

B (0,-6)

C (-4,0)

D (4,0)

Answer: B

Explanation:

The line $3x + 2y = -12$ will intercept the y-axis at $x = 0$

Thus, substituting value of x in above equation

$$\Rightarrow 3(0) + 2y = -12$$

$$\Rightarrow y = \frac{-12}{2} = -6$$

Thus, the line will intercept y axis at (0,-6)

=> Ans - (B)

Question 97

Refer the below data table and answer the following Question.

	Quantity of Stock	Average Cost (Rs)
Mobile Phones	29	18000
Cameras	22	6000
TVs	63	51000
Refrigerators	45	49000
ACs	27	25000

What is the value of the total stock (in lakh rupees)?

A 67.47

B 674.7

C 149

D 186

Answer: A

Explanation:

Total cost of mobiles = $29 \times 18000 = \text{Rs. } 5,22,000$

Total cost of Cameras = $22 \times 6000 = \text{Rs. } 1,32,000$

Total cost of TVs = $63 \times 51000 = \text{Rs. } 32,13,000$

Total cost of Refrigerator = $45 \times 49000 = \text{Rs. } 22,05,000$

Total cost of AC = $27 \times 25000 = \text{Rs. } 6,75,000$

\therefore Total cost = $5,22,000 + 1,32,000 + 32,13,000 + 22,05,000 + 6,75,000 = \text{Rs. } 67,47,000$

Total cost in lakhs = Rs 67.47 lakhs

=> Ans - (A)

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Question 98

Refer the below data table and answer the following Question.

Year	Ratio Import / Export
2011	1.1
2012	1.4
2013	0.7
2014	0.8
2015	0.8

If the imports in 2012 was Rs. 600 crores and the total exports In the years 2012 and 2013 together was Rs. 2400 crores, then the imports in 2013 was?

A 1971

B 429

C 2816

D 1380

Answer: D

Explanation:

Imports in 2012 = Rs. 600 crores

Let Exports in 2012 = Rs. y crores

Ratio of imports and exports in 2012 = 1.4

$$\Rightarrow \frac{600}{y} = 1.4$$

$$\Rightarrow y = \frac{600}{1.4} = 428.57$$

Total exports In the years 2012 and 2013 together = Rs. 2400 crores

\Rightarrow Exports in 2013 = Rs. (2400 - 428.57) crores = Rs. 1971.43 crores

Let imports in 2013 = Rs. x crores

Ratio of imports and exports in 2013 = $\frac{x}{1971.43} = 0.7$

$$\Rightarrow x = 1971.43 \times 0.7 = 1380.001 \approx 1380$$

\therefore Imports in 2013 was Rs. 1380 crores

\Rightarrow Ans - (D)

Question 99

Refer the below data table and answer the following Question.

Measured on Birthday	Height of the child (in cms)
4	100
5	105
6	115
7	125
8	135
9	140
10	150
11	160
12	165
13	175
14	180
15	190
16	200

What was the increase in the height of the child from the 7th Birthday to the 11th Birthday?

A 35 cms

B 40 cms

C 45 cms

D 30 cms

Answer: A

Explanation:

Height on 7th birthday = 125 cm

Height on 11th birthday = 160 cm

Increase in height = $160 - 125 = 35$ cm

=> Ans - (A)

Question 100

Refer the below data table and answer the following Question.

Deep Sleep	10
Dreaming	25
Light Sleep	10
Extremely Light Sleep	5
Awake	50

Between 10pm to 6am, a fitness band records the following data. How long was the user in Light sleep or was in Extremely light sleep ?

A 0.7 hours

B 1.2 hours

C 1.7 hours

D 2.3 hours

Answer: B

Explanation:

Total time between 10 pm to 6 am = 8 hours

% time spent in Light sleep or in Extremely light sleep = $10 + 5 = 15\%$

=> Time spent in Light sleep or in Extremely light sleep = $\frac{15}{100} \times 8$

= $\frac{3 \times 2}{5} = 1.2$ hours

=> Ans - (B)

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