



SSC CHSL 10 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.

Omelette : Egg :: Cloth : ?

- A Ore
- B Wood
- C Fibre
- D Pulp

Answer: C

Explanation:

Expression = Omelette : Egg :: Cloth : ?

Omelette is made from egg, similarly cloth is made from *fibre*.

=> Ans - (C)

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Question 2

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

JK : PQ :: FG : ?

- A HI
- B TU
- C EF
- D UT

Answer: B

Explanation:

Expression = JK : PQ :: FG : ?

When the code is reversed, alphabets at the corresponding position from the *reverse end* are written.

D 50

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

Find out the odd word/letters/number/number pair from the given alternatives.

A Honesty

B Veracity

C Deceit

D Sincerity

Answer: C

Explanation:

Honesty, veracity and sincerity are synonyms meaning truthfulness, hence deceit is the odd one out.

=> Ans - (C)

Question 6

Find out the odd word/letters/number/number pair from the given alternatives.

A TBC

B DEZ

C VUW

D BAM

Answer: A

Explanation:

The last three letters contain one vowel, hence TBC is the odd one out.

=> Ans - (A)

Question 7

Find out the odd word/letters/number/number pair from the given alternatives.

A 216

B 841

C 676

D 784

Answer: A

Explanation:

$$216 = (6)^3$$

$$841 = (29)^2$$

$$676 = (26)^2$$

$$784 = (28)^2$$

=> Ans - (A)

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Question 8

Find out the odd word/letters/number/number pair from the given alternatives.

A 422

B 716

C 928

D 734

Answer: C

Explanation:

The positive difference between the first two digits is equal to the last digit, but $9 - 2 \neq 8$, hence 928 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.

?, Oxygen, Argon, Carbon dioxide

- A Nitrogen
- B Water vapour
- C Methane
- D Carbon monoxide

Answer: A

Explanation:

The gases are given in decreasing order of their content in the atmosphere.

= Nitrogen -> Oxygen -> Argon -> Carbon dioxide

=> 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.

4, 6, 9, 13.5, ?

- A 23.25
- B 32.5
- C 31.25
- D 20.25

Answer: D

Explanation:

Each term is multiplied by 1.5

$$4 \times 1.5 = 6$$

$$6 \times 1.5 = 9$$

$$9 \times 1.5 = 13.5$$

$$13.5 \times 1.5 = \mathbf{20.25}$$

=> Ans - (D)

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Question 11

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) Real number includes the natural number.
- (II) Natural number is not included in whole number.

Conclusion:

- (I) Natural number is not whole number.
- (II) Real number is a natural and whole number

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

Answer: A

Question 12

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

WW, ss, QQ, ? , KK

- A gg
- B MM
- C mm
- D ee

Answer: C

Explanation:

The pattern followed is that alternate term are written in capital and small letters.

WW (-4 letters) = ss (-2 letters) = QQ (-4 letters) = mm (-2 letters) = KK

Thus, missing term = **mm**

=> 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.

IG, MK, RP, ?

A ZA

B AB

C XV

D GE

Answer: C

Explanation:

Expression : IG, MK, RP, ?

The pattern followed in each letter of the terms is :

1st letter : I (+4 letters) = M (+5 letters) = R (+6 letters) = X

2nd letter : G (+4 letters) = K (+5 letters) = P (+6 letters) = V

Thus, missing term = **XV**

=> Ans - (C)

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Question 14

The sum of the ages of Anuj and his mother is 32, and his father's age is 38 years. If his father is 8 years elder to his mother, what is the age (in years) of Anuj?

A 4

B 2

C 1

D 5

Answer: B

Explanation:

Anuj's father's age = 38 years

=> His mother's age = $38 - 8 = 30$ years

Also, sum of the ages of Anuj and his mother = 32

∴ Anuj's age = $32 - 30 = 2$ years

=> Ans - (B)

Question 15

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

- i. Amoeba
- ii. Amok
- iii. Amiable
- iv. Amalgamate

A ii, i, iv, iii

B iii, iv, ii, i

C iv, iii, i, ii

D ii, iv, iii, i

Answer: C

Explanation:

As per the order of dictionary :

= Amalgamate -> Amiable -> Amoeba -> Amok

≡ iv, iii, i, ii

=> Ans - (C)

Question 16

In a certain code language, "ROYALTY" is written as "ZUMBZPS". How is "LINGER" written in that code language?

A SFHJOM

B SFHOJM

C SHFOJM

D SHFOMJ

Answer: B

Explanation:

"ROYALTY" is written as "ZUMBZPS"

The pattern followed when the word is reversed is :

Y	T	L	A	Y	O	R
(+1)	(+1)	(+1)	(+1)	(+1)	(+1)	(+1)
Z	U	M	B	Z	P	S

Similarly, reverse of LINGER :

R	E	G	N	I	L
(+1)	(+1)	(+1)	(+1)	(+1)	(+1)
S	F	H	O	J	M

=> Ans - (B)

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Question 17

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

16	81	49
6	5	6
52	106	?

A 24

B 32

C 20

D 85

Answer: D

Explanation:

In each column the number at the end is obtained by adding the square of the second number to the first number.

$$\text{Eg :- } (6)^2 + 16 = 36 + 16 = 52$$

$$(5)^2 + 81 = 25 + 81 = 106$$

$$\text{Similarly, } (6)^2 + 49 = 36 + 49 = 85$$

=> Ans - (D)

Question 18

If "A" denotes "multiplied by", "C" denotes "subtracted from", "D" denotes "added to" and "B" denotes "divided by", then $8 \text{ C } 45 \text{ D } 180 \text{ B } 9 \text{ A } 11 = ?$

A 141

B 142

C 183

D 143

Answer: C

Explanation:

Expression : $8 C 45 D 180 B 9 A 11 = ?$

$$\equiv 8 - 45 + 180 \div 9 \times 11$$

$$= -37 + (20 \times 11)$$

$$= -37 + 220 = 183$$

=> Ans - (C)

Question 19

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

_b_b_da_bbcd

A dcdc

B caca

C addd

D abcb

Answer: D

Explanation:

The pattern followed is that in groups of 6, the term 'abbbcd' is repeated.

= abbbcd abbbcd

=> Ans - (D)

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Question 20

Amit's house is to the east of Ankit's house. Suman's house is to the south of Amit's house. Raman's house is to the east of Amit's house. In which direction is Raman's house with respect to Suman's house?

A East

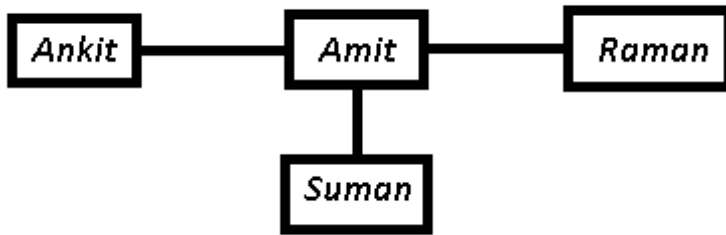
B North-east

C South-east

D South

Answer: B

Explanation:



Amit's house is to the east of Ankit's house. Suman's house is to the south of Amit's house.

Also, Raman's house is to the east of Amit's house.

Thus, Raman's house is north-east of Suman's house.

=> Ans - (B)

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, 'N' can be represented by 21, 67 etc. and 'R' can be represented by 66, 57 etc. Similarly, you have to identify the set for the word 'NUMBER'.

Matrix - I

	0	1	2	3	4
0	Q	O	A	N	B
1	W	I	N	H	L
2	E	N	S	G	O
3	N	Y	D	O	M
4	M	T	O	F	A

Matrix - II

	5	6	7	8	9
5	Z	M	R	S	Q
6	X	R	N	W	A
7	C	S	Y	E	U
8	S	N	T	E	S
9	V	B	E	R	U

A 67, 99, 56, 04, 02, 57

B 12, 79, 56, 04, 20, 34

C 86, 99, 56, 43, 20, 57

D 21, 79, 56, 04, 20, 57

Answer: D

Explanation:

(A) : 67, 99, 56, 04, 02, 57 = NUMBAR

(B) : 12, 79, 56, 04, 20, 34 = NUMBEM

(C) : 86, 99, 56, 43, 20, 57 = NUMFER

(D) : 21, 79, 56, 04, 20, 57 = **NUMBER**

=> Ans - (D)

Question 22

Introducing a boy Ankur says, "He is the son of the only sister of my grandfather's daughter-in-law". How is the boy related to Ankur?

- A Nephew
- B Son-in-law
- C Son
- D Cousin

Answer: D

Explanation:

Ankur's grandfather's daughter-in-law = Ankur' mother

Only sister of Ankur's mother = Ankur's aunt

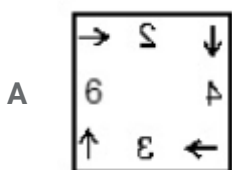
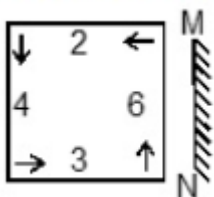
Now, that boy is son of Ankur's aunt, => Ankur and the boy are cousins.

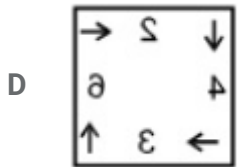
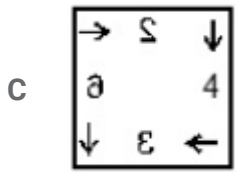
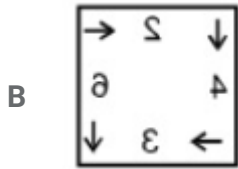
=> Ans - (D)

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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 ?



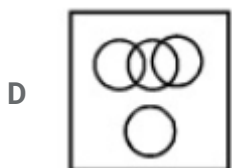
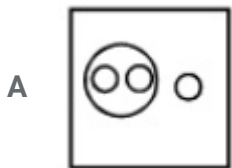


Answer: D

Question 24

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

Festivals, Eid, Durga Pooja, Deepawali



Answer: C

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: B

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General Awareness

Instructions

For the following questions answer them individually

Question 26

DNS is a networking term that refers to

- A Domain Name System

- B Digital Network Service
- C Disk Numbering Sequence
- D Data Number System

Answer: A

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Question 27

Telephone exchange was invented by?

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

Answer: A

Question 28

Scurvy (bleeding of gums) is caused by the deficiency of which vitamin?

- A Vitamin K
- B Vitamin B2
- C Vitamin C
- D Vitamin A

Answer: C

Question 29

Achras sapota is the scientific name of

- A Custard Apple
- B Gulmohar
- C Tamarind

D Chiku

Answer: D

SSC CPO Free Mock Test (Latest Pattern)

Question 30

Prawn belongs to the phylum

A Arthropoda

B Cnidaria

C Echinodermata

D Chordata

Answer: A

Question 31

What does a catalyst do in a reaction?

A Changes potential energy of reactants

B Changes kinetic energy of reactants

C Changes potential energy of products

D Changes activation energy

Answer: D

Question 32

Adding which substance gives green colour to glass?

A Calcium oxide

B Iron oxide

C Chromium oxide

D Manganese oxide

Answer: C

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Question 33

Ellora Caves is in

- A Karnataka
- B Madhya Pradesh
- C Maharashtra
- D Rajasthan

Answer: C

Question 34

_____ festival is celebrated on a full-moon day.

- A Dussehra
- B Holi
- C Christmas
- D Rakhi

Answer: B

Question 35

If demand curve for a fishing rod is $D = 37000 - 11P$ and supply curve is $S = 12000 + 9P$, find the equilibrium quantity?

- A 1250 units
- B 23250 units
- C 52350 units
- D 2500 units

Answer: B

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Question 36

Balance of Trade is the difference between which factors?

- A Country's Income and Expense
- B Country's Exports and Imports
- C Country's Tax Revenue and Expense
- D Country's capital inflow and outflow

Answer: B

Question 37

Which of the following gases if present in the atmosphere can be detected by its odour?

- A Ethane
- B Sulphur dioxide
- C Hydrogen
- D Carbon monoxide

Answer: B

Question 38

The number of biogeographical zones in India are

- A 2
- B 10
- C 5
- D 6

Answer: B

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Question 39

_____ is an indigenous light combat aircraft of India?

- A Vishal
- B Garv
- C Tejas
- D Dhanush

Answer: C

Question 40

In which direction does the earth rotates around its axis?

- A east to west
- B west to east
- C north to south
- D south to east

Answer: B

Question 41

Which state in India receives the highest rainfall?

- A Meghalaya
- B Rajasthan
- C Uttarakhand
- D Kerala

Answer: A

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Question 42

Tipu Sultan was also known as Tiger of _____.

- A Mysore
- B Delhi

C Agra

D Gwalior

Answer: A

Question 43

Sri Aurobindo was born in the year

A 1772

B 1822

C 1872

D 1922

Answer: C

Question 44

Highest Civilian Honour received by A. P. J. Abdul Kalam is

A Padma Shri

B Padma Bhushan

C Padma Vibhushan

D Bharat Ratna

Answer: D

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Question 45

What will happen to the force between the two positive charges which are released after being held near each other?

A Force will increase

B Force will decrease

C Force will stay the same

D Force first increases to reach maximum before starting to decrease

Answer: B

Question 46

Which device is used to measure earthquakes?

- A Endoscope
- B Thermometer
- C Sonograph
- D Seismograph

Answer: D

Question 47

Which bill cannot originate in Rajya Sabha?

- A Constitutional Amendment Bill
- B Ordinary Bill
- C Fundamental Bill
- D Money Bill

Answer: D

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Question 48

Who can initiate the process of removal of the President before the expiry of his term?

- A Lok Sabha
- B Supreme court
- C Common man
- D Member of parliament

Answer: A

Question 49

Kobe Bryant is associated with which sport?

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

Answer: B

Question 50

Who wrote the Panchatantra?

- A Vyasa
- B Vishnu Sharma
- C Valmiki
- D Yajnavalkya

Answer: B

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English

Instructions

For the following questions answer them individually

Question 51

Select the word with the correct spelling.

- A lassoing
- B psychik
- C thacher
- D squeezer

Answer: A

Explanation:

Only 'lassoing' is correctly spelt. psychik should be spelt as 'psychic', thacher should be spelt as 'thatcher', 'squezer' should be spelt as 'squeezer'.

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Question 52

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.

Rational thinkers are intellectually _____ than those who accept faith without questioning the age old practices.

- A cultured
- B sophisticated
- C superior
- D modern

Answer: C

Question 53

Select the synonym of ancient

- A topical
- B extant
- C archaic
- D fad

Answer: C

Question 54

Choose the antonym of analogue

- A correlate
- B cognate
- C dialogue
- D difference

Answer: D

Explanation:

'Analogue' means a person or a thing seen as comparable to another.

So out of the given options 'difference' must be the antonym of 'analogue'.

Hence, option D is the right choice.

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Question 55

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

A hot potato

- A A war like situation which could have been easily avoided
- B A common eatery but favoured by celebrities
- C A controversial situation which is awkward to deal with
- D A celebrity who keeps getting into some or the other controversy

Answer: C

Question 56

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'.

The shifting task is almost done,(A)/only the furnitures(B)/have to be delivered.(C)/No error(D)

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

Answer: B

Question 57

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

A spot or a stain caused by a discolouring substance

- A Hue

- B Blot
- C Tint
- D Dye

Answer: B

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Question 58

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.

He said, "I bought an iPhone 6 yesterday."

- A He said that he had bought an iPhone 6 the previous day.
- B He said he bought an iPhone 6 the previous day.
- C He said that he has bought an iPhone 6 yesterday.
- D He exclaimed, an iPhone 6 has been bought by him yesterday.

Answer: A

Question 59

Select the antonym of amusement

- A mischief
- B naughty
- C melancholy
- D hilarity

Answer: C

Question 60

Rearrange the parts of the sentence in correct order.

This alone

P-should alert us to what

Q-is actually about

R-the demand for a Uniform Civil Code

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

Answer: A

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Question 61

Select the synonym of 'splayed'

- A nimble
- B jade
- C frayed
- D spread

Answer: D

Explanation:

'Splay' means to spread things apart. Hence, option D is the correct answer.

Question 62

Select the word with the correct spelling.

- A humable
- B customer
- C breches
- D boufant

Answer: B

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'.

With little creativity and hard work(A)/the project could have been (B)/successfully completed.(C)/No error

A A

B B

C C

D D

Answer: A

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Question 64

Improve the bracketed part of the sentence.

Hardly had she finished her dinner (then) the doorbell rang.

A than

B when

C while

D no improvement

Answer: B

Question 65

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

New kid on the block

A New rules which are bound to fail

B A junior

C A new social trend

D A newcomer

Answer: D

Question 66

Rearrange the parts of the sentence in correct order.

Ironically, in spite of a decline in poverty,

P-the proportion of

Q-the population receiving welfare

R-benefits has risen sharply

A QRP

B PQR

C RPQ

D QPR

Answer: B

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Question 67

Improve the bracketed part of the sentence.

In the housing society where I live there is a nice house (to let out).

A to let

B for letting

C to be let out

D no improvement

Answer: A

Question 68

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

A person who applies for a job or is nominated for election

A Candidate

B Elect

C Volunteer

D Nominator

Answer: A

Question 69

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.

Mother filled dark filtered coffee in the cup.

- A The cup was filled with dark filtered coffee by mother.
- B Mother filled in the cup coffee which was dark and filtered.
- C The cup was being filled by mother with dark filtered coffee.
- D The filtered coffee which was dark was filled into the cup by mother.

Answer: A

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Question 70

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.

Politicians requested both the warring communities to _____ restraint.

- A depict
- B enforce
- C show
- D exercise

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.

Sometimes the grand ____ (1) ____ of the Left and the Right do not seem to have any relationship with the lived experiences of ordinary Indians. For the past two decades, the Left has tried to expand social welfare programmes ____ (2) ____ the poor in the country by highlighting the growing ____ (3) ____ between the rich and the poor. The Right, on the other hand, points to the growing ____ (4) ____ of politically driven welfare policies and emphasises the need for economic growth to ____ (5) ____ poverty and improve the lives of the poor.

Question 71

(1)

- A histories
- B plots
- C versions
- D narratives

Answer: D

Explanation:

'narratives' best fits the context of the blank as narrative means a story or a tale. The author wants to suggest that the story of neither the left nor the right seems to have any relationship with the ordinary citizens. Hence, option D is the correct choice.

Question 72

(2)

- A for
- B which
- C that
- D of

Answer: A

Explanation:

Any program is 'for the people'. Hence, 'for' is the best fit for the given blank. The other words do not make a logical or grammatical sense in the given blank.

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Question 73

(3)

- A dissimilarities
- B discrepancies
- C disparities

D disillusion

Answer: C

Explanation:

The author is trying to convey the growing inequalities between the rich and the poor. Hence, 'disparities' is the best fit for the given blank. It means 'inequalities'. Hence, option C is the correct answer.

Question 74

(4)

A issue

B matter

C pain

D burden

Answer: D

Explanation:

Growing 'issue' or growing 'matter' does not make sense in the given context. Among pain and burden, the latter is a better fit as the author is trying to highlight the negative implications of politically driven schemes. Hence, 'burden' is the best fit for the given blank.

Question 75

(5)

A agitate

B alleviate

C aggravate

D depress

Answer: B

Explanation:

The author is trying to highlight the need to solve the problems of the poor. Hence, 'alleviate' is the best fit for the given blank as to alleviate means to provide relief.

SSC GD Constable Free Mock Test (Latest Pattern)

Mathematics

Instructions

For the following questions answer them individually

Question 76

Daily ticket of a local train costs Rs 140 and Monthly Pass costs Rs 3276. If Mohan buys the Monthly Pass and travels for 30 days in a month then what amount does he save?

- A 18 percent
- B 16 percent
- C 15 percent
- D 22 percent

Answer: D

Explanation:

Train ticket cost for 1 day = Rs. 140

=> Cost for 30 days = $30 \times 140 = \text{Rs. } 4200$

Cost of monthly pass = Rs. 3276

=> Money saved = $4200 - 3276 = \text{Rs. } 924$

\therefore Required % = $\frac{924}{4200} \times 100$

= $\frac{924}{42} = 22\%$

=> Ans - (D)

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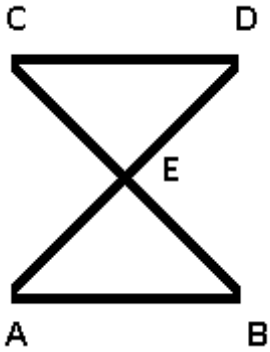
Question 77

Segment AB is parallel to segment CD. AD intersects BC in E. If lengths of AE, BC and ED are 10 cm, 15 cm and 15 cm, what is the length of EC?

- A 10 cm
- B 6 cm
- C 5 cm
- D 9 cm.

Answer: D

Explanation:



Given : AB is parallel to CD. AE = 10 cm , BC = 15 cm and ED = 15 cm

To find : EC = ?

Solution : Let $EC = x$ cm

In $\triangle BAE$ and $\triangle CDE$

$\Rightarrow \angle ABE = \angle DCE$ (Alternate interior angles)

$\Rightarrow \angle BAE = \angle CDE$ (Alternate interior angles)

$\Rightarrow \angle AEB = \angle CED$ (Vertically opposite angles)

Thus, $\triangle BAE \sim \triangle CDE$ (AAA criteria)

$$\therefore \frac{AE}{DE} = \frac{EB}{EC}$$

$$\Rightarrow \frac{10}{15} = \frac{(15-x)}{x}$$

$$\Rightarrow \frac{(15-x)}{x} = \frac{2}{3}$$

$$\Rightarrow 45 - 3x = 2x$$

$$\Rightarrow 2x + 3x = 5x = 45$$

$$\Rightarrow x = \frac{45}{5} = 9 \text{ cm}$$

\Rightarrow Ans - (D)

Question 78

A bank offers 5% compound interest per half year. A customer deposits Rs 8000 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 is

A Rs 2440

B Rs 610

C Rs 1220

D Rs 305

Answer: C

Explanation:

The interest earned on 8000 from Jan to July will be $8000 \times 5 \times \frac{1}{100}$ (Since rate of interest is 5 % per 6 months)

$$= 80 \times 5 = 400$$

Hence, 8000 will amount to 8400. He adds another 8000 to this. So the net amount becomes $8400 + 8000 = 16,400$.

Now interest earned on this amount in a period of 6 months will be $16400 \times 5 \times \frac{1}{100} = 820$

So the final amount will be $16400 + 820 = 17220$

Total money he deposited = $8000 + 8000 = 16000$

Hence, amount earned via interest = $17220 - 16000 = 1220$

=> Ans - (C)

Question 79

If $16qxy = (2x + y)^2 - (2x - y)^2$, then what is the value of q?

A 0.5

B 0.25

C 4

D 2

Answer: A

Explanation:

Expression : $16qxy = (2x + y)^2 - (2x - y)^2$

R.H.S. = $(2x + y)^2 - (2x - y)^2$

$$= (4x^2 + y^2 + 4xy) - (4x^2 + y^2 - 4xy)$$

$$= (4x^2 - 4x^2) + (y^2 - y^2) + (4xy + 4xy)$$

$$= 8xy$$

L.H.S. = $16qxy$

$$\Rightarrow 16q = 8$$

$$\Rightarrow q = \frac{8}{16} = 0.5$$

=> Ans - (A)

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Question 80

The greatest four digit number that is divisible by both 15 and 35 is

A 9970

B 9965

C 9975

D 9980

Answer: C

Explanation:

L.C.M. of 15 and 35 = 105

Now, the greatest 4 digit number = 9999

By dividing 9999 with 105, $\Rightarrow 9999 = 105 \times 95 + 24$

Quotient = 95 and remainder = 24

Thus, the greatest 4 digit number that can be divided by 105(15 and 35) = $9999 - 24 = 9975$

\Rightarrow Ans - (C)

Question 81

Which of the following points lies on the line $5x + 4y = 2$?

A (2,3)

B (-2,-3)

C (-2,3)

D (2,-3)

Answer: C

Explanation:

Equation : $5x + 4y = 2$

(A) : (2,3)

$\Rightarrow 5(2) + 4(3) = 22 \neq 2$

(B) : (-2,-3)

$\Rightarrow 5(-2) + 4(-3) = -22 \neq 2$

(C) : (-2,3)

$\Rightarrow 5(-2) + 4(3) = 2$

(D) : (2,-3)

$\Rightarrow 5(2) + 4(-3) = -2 \neq 2$

=> Ans - (C)

Question 82

The total surface area of a hemisphere is 1848 sq cm, what is its radius? (Take $\pi = 22/7$)

- A 28 cms
- B 7 cms
- C 21 cms
- D 14 cms

Answer: D

Explanation:

Let radius of hemisphere = r cm

Total surface area of hemisphere = $3\pi r^2 = 1848$

$$\Rightarrow r^2 = \frac{1848}{3\pi}$$

$$\Rightarrow r^2 = 616 \times \frac{7}{22}$$

$$\Rightarrow r^2 = 28 \times 7 = 196$$

$$\Rightarrow r = \sqrt{196} = 14 \text{ cm}$$

=> Ans - (D)

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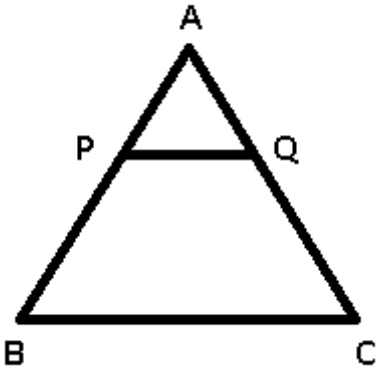
Question 83

Points P and Q lies on side AB and AC of triangle ABC respectively such that segment PQ is parallel to side BC. If the ratio of areas of triangle APQ and triangle ABC is 9:16, then what is the ratio of AP:PB?

- A 3:4
- B 9:7
- C 9:16
- D 3:1

Answer: D

Explanation:



In $\triangle APQ$ and $\triangle ABC$

$\angle PAQ = \angle BAC$ (common)

$\angle APQ = \angle ABC$ (Alternate interior angles)

$\angle AQP = \angle ACB$ (Alternate interior angles)

$\Rightarrow \triangle APQ \sim \triangle ABC$

\Rightarrow Ratio of Area of $\triangle APQ$: Area of $\triangle ABC$ = Ratio of square of corresponding sides = $(AP)^2 : (AB)^2$

$$\Rightarrow \frac{9}{16} = \frac{(AP)^2}{(AB)^2}$$

$$\Rightarrow \frac{AP}{AB} = \sqrt{\frac{9}{16}} = \frac{3}{4}$$

Also, $PB = AB - AP$

$$\Rightarrow \frac{AP}{PB} = \frac{3}{4-3} = \frac{3}{1}$$

\Rightarrow Ans - (D)

Question 84

Which of the following equations has the sum of its roots as 7?

A $x^2 + 7x + 14 = 0$

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

C $x^2 + 5x + 6 = 0$

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

Answer: B

Explanation:

In a quadratic equation of the form : $ax^2 + bx + c = 0$, the sum of the roots is given by = $-\frac{b}{a}$

= Ratio of negative coefficient of x to coefficient of x^2

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

$$\Rightarrow \text{Sum of roots} = \frac{-(-7)}{1} = 7$$

=> Ans - (B)

Question 85

$(\operatorname{cosec} A - \sin A)(\sec A - \cos A)(\tan A + \cot A)$ is equals to

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

Answer: C

Explanation:

Expression : $(\operatorname{cosec} A - \sin A)(\sec A - \cos A)(\tan A + \cot A)$

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

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

Using, $(\sin^2 A + \cos^2 A = 1)$

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

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

=> Ans - (C)

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Question 86

x and y are two numbers such that their mean proportion is 6 and third proportion is 48. What is the value of x and y ?

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

Answer: D

Explanation:

Three numbers a, b, c are in proportion iff $b^2 = ac$ where b is the mean proportion and c is the third proportion

Mean proportion of two numbers x and $y = 6$

$$\Rightarrow xy = (6)^2 = 36 \text{ -----(i)}$$

Third proportion = 48

$$\Rightarrow y^2 = x \times 48 \text{ -----(ii)}$$

Substituting value of x from equation(i) in equation(ii), we get :

$$\Rightarrow y^2 = \frac{36}{y} \times 48$$

$$\Rightarrow y^3 = (2)^3 \times (6)^3 = (12)^3$$

$$\Rightarrow y = (12)^{\frac{3}{3}} = 12$$

Substituting it in equation(i), $\Rightarrow x = \frac{36}{12} = 3$

\Rightarrow Ans - (D)

Question 87

The mean of marks secured by 55 students in division-A of class X is 55, 45 students of division-B is 51 and that of 40 students of division-C is 49. What is the mean of marks of the students of three divisions of Class X?

A 51.3

B 50.6

C 52

D 53.4

Answer: C

Explanation:

Total marks secured by 55 students in division A = $55 \times 55 = 3025$

Total marks secured by 45 students in division B = $45 \times 51 = 2295$

Total marks secured by 40 students in division C = $40 \times 49 = 1960$

$$\Rightarrow \text{Mean of marks of the students of three divisions of Class X} = \frac{(3025+2295+1960)}{(55+45+40)}$$

$$= \frac{7280}{140} = 52$$

\Rightarrow Ans - (C)

Question 88

What is the value of $\cos^2(A/2)$?

A $(1 - \cos A)/2$

B $(1 + \cos A)/2$

C $(1 + \sin A)/2$

D $(1 - \sin A)/2$

Answer: B

Explanation:

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

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

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

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

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

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

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

\Rightarrow Ans - (B)

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Question 89

One diagonal of a rhombus is half the other. If the length of the side of the rhombus is 10 cm, what is the area of the rhombus?

A $75\sqrt{3}$ sq cm

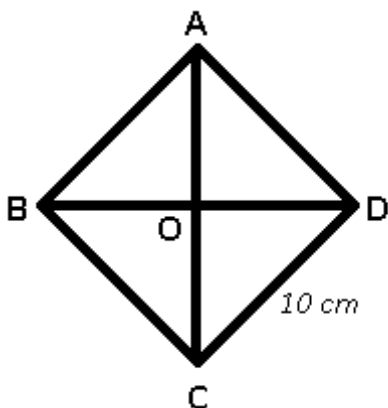
B $25\sqrt{3}$ sq cm

C 80 sq cm

D 160 sq cm

Answer: C

Explanation:



AC and BD are diagonals of the rhombus ABCD with side = 10 cm

One diagonal of a rhombus is half the other, let AC = $4x$ cm

$$\Rightarrow BD = 2x \text{ cm}$$

Diagonal of a rhombus perpendicularly bisect each other.

$$\Rightarrow OD = x \text{ cm and } OC = 2x \text{ cm}$$

$$\text{In } \triangle OCD, \Rightarrow (OC)^2 + (OD)^2 = (CD)^2$$

$$\Rightarrow (2x)^2 + (x)^2 = (10)^2$$

$$\Rightarrow 4x^2 + x^2 = 100$$

$$\Rightarrow x^2 = \frac{100}{5} = 20$$

\therefore Area of rhombus = $\frac{1}{2} \times$ Product of diagonals

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

$$= 4x^2 = 4 \times 20 = 80 \text{ cm}^2$$

\Rightarrow Ans - (C)

Question 90

P and Q can finish a work in 24 and 12 days respectively. In how many days can they complete 50% of the work if they work together?

A 8 days

B 2 days

C 4 days

D 16 days

Answer: C

Explanation:

Let total work to be done = 24 units

P can complete the work alone in 24 days

$$\Rightarrow \text{P's efficiency} = \frac{24}{24} = 1 \text{ unit/day}$$

Q can complete the work alone in 12 days

$$\Rightarrow \text{Q's efficiency} = \frac{24}{12} = 2 \text{ units/day}$$

(P + Q)'s 1 day's work = $2 + 1 = 3$ units/day

$$\Rightarrow 50\% \text{ of the work} = \frac{50}{100} \times 24 = 12 \text{ units}$$

\therefore Time taken by them together to complete 50% of the work = $12 \div 3 = 4$ days

\Rightarrow Ans - (C)

Question 91

A rice trader buys 16 quintals of rice for Rs 1,280. 18% rice is lost in transportation. At what rate should he sell to earn 23% profit?

- A Rs 53.33 per quintal
- B Rs 98.4 per quintal
- C Rs 122.5 per quintal
- D Rs 120 per quintal

Answer: D

Explanation:

Cost price = Rs. 1280 for 16 quintals

Quantity of rice with the trader after transportation lost = $\frac{100-18}{100} \times 16 = \frac{82}{25} \times 4$
= 13.12 quintals

To have 23% profit, total selling price of the trader should be = $\frac{123}{100} \times 1280$
= Rs. 1574.4

\therefore Selling price per quintal = $\frac{1574.4}{13.12} = Rs.120$

=> Ans - (D)

SSC CHSL Syllabus

Question 92

To travel 780 km, an Express train takes 8 hours more than Rajdhani. If however, the speed of the Express train is doubled, it takes 6 hours less than Rajdhani. The speed (in km/hr) of Rajdhani is

- A 39 km/hr
- B 55.7 km/hr
- C 22.3 km/hr
- D 72.4 km/hr

Answer: A

Explanation:

Let speed of Rajdhani train = x km/hr and Express train = y km/hr

Using, time = distance/speed

$$\text{Acc. to ques, } \Rightarrow \frac{780}{y} - \frac{780}{x} = 8$$

$$\Rightarrow \frac{1}{y} - \frac{1}{x} = \frac{8}{780} = \frac{2}{195} \text{-----(i)}$$

If speed of express train is doubled = $2y$ km/hr

$$\Rightarrow \frac{780}{x} - \frac{780}{2y} = 6$$

$$\Rightarrow \frac{1}{x} - \frac{1}{2y} = \frac{6}{780} = \frac{1}{130} \text{-----(ii)}$$

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

$$\Rightarrow \frac{1}{y} - \frac{1}{2y} = \frac{2}{195} + \frac{1}{130}$$

$$\Rightarrow \frac{1}{2y} = \frac{4+3}{390} = \frac{7}{390}$$

$$\Rightarrow y = \frac{195}{7} \text{ km/hr}$$

$$\therefore \text{Speed of Rajdhani} = \frac{1}{x} = \frac{7}{195} - \frac{2}{195}$$

$$\Rightarrow \frac{1}{x} = \frac{5}{195} = \frac{1}{39}$$

$$\Rightarrow x = 39 \text{ km/hr}$$

\Rightarrow Ans - (A)

Question 93

cot $-11\pi/6$ is equals to

A $-\sqrt{3}$

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

C $-\frac{1}{\sqrt{3}}$

D $\sqrt{3}$

Answer: D

Explanation:

Expression : cot $-11\pi/6$

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

$$= -\cot\left(\frac{11\pi}{6}\right)$$

$$= -\cot\left(2\pi - \frac{\pi}{6}\right)$$

$$= -[-\cot\left(\frac{\pi}{6}\right)] = \cot\left(\frac{\pi}{6}\right)$$

$$= \sqrt{3}$$

\Rightarrow Ans - (D)

Question 94

If $5x + 2 > 3x + 1$ and $4(x - 4) - 2 \leq 3x - 1$, then x can take which of the following values?

- A 16
- B 18
- C -6
- D -16

Answer: A

Explanation:

Expression 1 : $5x + 2 > 3x + 1$

$$\Rightarrow 5x - 3x > 1 - 2$$

$$\Rightarrow 2x > -1$$

$$\Rightarrow x > \frac{-1}{2} \text{ -----(i)}$$

Expression 2 : $4(x - 4) - 2 \leq 3x - 1$

$$\Rightarrow 4x - 16 - 2 \leq 3x - 1$$

$$\Rightarrow 4x - 3x \leq -1 + 18$$

$$\Rightarrow x \leq 17 \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $\frac{-1}{2} < x \leq 17$

The only value that x can take among the options = 16

\Rightarrow Ans - (A)

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Question 95

The value of x for which the expressions $5x + 3$ and $7x - 3$ become equal is

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

Answer: A

Explanation:

Expressions : $5x + 3$ and $7x - 3$

$$\Rightarrow 5x + 3 = 7x - 3$$

$$\Rightarrow 7x - 5x = 3 + 3$$

$$\Rightarrow 2x = 6$$

$$\Rightarrow x = \frac{6}{2} = 3$$

\Rightarrow Ans - (A)

Question 96

A student multiplied a number by $\frac{5}{8}$ instead of $\frac{8}{5}$. What is the percentage error in the calculation?

A 60.94 percent

B 156 percent

C 30.47 percent

D 78 percent

Answer: A

Explanation:

Let the number be 40

When the student multiplied it by $\frac{5}{8}$, \Rightarrow original result = $\frac{5}{8} \times 40 = 25$

When the student multiply it by $\frac{8}{5}$, \Rightarrow New result = $\frac{8}{5} \times 40 = 64$

\Rightarrow Percentage error in calculation = $\frac{(64-25)}{64} \times 100$

= $\frac{3900}{64} = 60.937 \approx 60.94\%$

\Rightarrow Ans - (A)

Question 97

Refer the below data table and answer the following Question.

	Quantity of Stock	Average Cost (Rs)
Mobile Phones	59	15000
Cameras	72	16000
TVs	77	36000
Refrigerators	100	28000
ACs	98	23000

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

A 986.3

- B 118
C 98.63
D 406

Answer: C

Explanation:

Total cost of mobiles = $59 \times 15000 = \text{Rs. } 8,85,000$

Total cost of Cameras = $72 \times 16000 = \text{Rs. } 11,52,000$

Total cost of TVs = $77 \times 36000 = \text{Rs. } 27,72,000$

Total cost of Refrigerator = $100 \times 28000 = \text{Rs. } 28,00,000$

Total cost of AC = $98 \times 23000 = \text{Rs. } 22,54,000$

\therefore Total cost = $8,85,000 + 11,52,000 + 27,72,000 + 28,00,000 + 22,54,000 = \text{Rs. } 98,63,000$

Total cost in lakhs = Rs 98.63 lakhs

=> Ans - (C)

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Question 98

Refer the below data table and answer the following Question.

Year	Company's % Profit
2011	1.1
2012	1.1
2013	0.7
2014	0.7
2015	0.7

If the imports in 2012 was Rs. 900 crores and the total exports in the years 2012 and 2013 together was Rs. 2800 crores, then the imports in 2013 was?

- A 1387
B 1982
C 818
D 2831

Answer: A

Explanation:

Imports in 2012 = Rs. 900 crores

Let Exports in 2012 = Rs. y crores

Ratio of imports and exports in 2012 = 1.1

$$\Rightarrow \frac{900}{y} = 1.1$$

$$\Rightarrow y = \frac{900}{1.1} = 818.18$$

Total exports In the years 2012 and 2013 together = Rs. 2800 crores

\Rightarrow Exports in 2013 = Rs. $(2800 - 818.18)$ crores = Rs. 1981.82 crores

Let imports in 2013 = Rs. x crores

$$\text{Ratio of imports and exports in 2013} = \frac{x}{1981.82} = 0.7$$

$$\Rightarrow x = 1981.82 \times 0.7 = 1387.274 \approx 1387$$

\therefore Imports in 2013 was Rs. 1387 crores

\Rightarrow Ans - (A)

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	120
8	125
9	130
10	135
11	145
12	150
13	155
14	160
15	170
16	180

What was the increase in the height of the child from the 9th Birthday to the 15th Birthday?

A 45 cms

B 40 cms

C 35 cms

D 50 cms

Answer: B

Explanation:

Height on 9th birthday = 130 cm

Height on 15th birthday = 170 cm

Increase in height = $170 - 130 = 40$ cm

=> Ans - (B)

Question 100

Refer the below data table and answer the following Question.

Deep Sleep	20
Dreaming	20
Light Sleep	5
Extremely Light Sleep	15
Awake	40

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

A 2.3 hours

B 2.8 hours

C 1.3 hours

D 3.3 hours

Answer: B

Explanation:

Total time between 10 pm to 6 am = 8 hours

% time spent in deep sleep and Extremely light sleep = $20 + 15 = 35\%$

=> Time spent in deep and extremely light sleep = $\frac{35}{100} \times 8$

= $\frac{7 \times 2}{5} = 2.8$ hours

=> Ans - (B)

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