



SSC CHSL 29 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.

Car : Garage :: Curio : ?

- A Aviary
- B Cellar
- C Museum
- D Granary

Answer: C

Explanation:

Expression = Car : Garage :: Curio : ?

A car is kept in a garage, similarly curio, i.e. a rare, unusual, or intriguing object is kept in a *museum*.

=> Ans - (C)

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Question 2

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

ABCD : HYXE :: MNOP : ?

- A TKJQ
- B TLJQ
- C TKQJ
- D TLQJ

Answer: A

Explanation:

Expression = ABCD : HYXE :: MNOP : ?

The pattern followed is :

A	B	C	D
(+7)	(-3)	(-5)	(+1)
H	Y	X	E

Similarly, MNOP : TKJQ

M	N	O	P
(+7)	(-3)	(-5)	(+1)
T	K	J	Q

=> Ans - (A)

Question 3

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

IKMO : PRTV :: RTVX : ?

- A YACE
- B YAEC
- C XACE
- D XCAE

Answer: A

Explanation:

Expression = IKMO : PRTV :: RTVX : ?

The pattern followed is :

I	K	M	O
(+7)	(+7)	(+7)	(+7)
P	R	T	V

Similarly, RTVX : YACE

R	T	V	X
(+7)	(+7)	(+7)	(+7)
Y	A	C	E

=> Ans - (A)

Question 4

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

5243 : 14 :: 4312 : ?

- A 10
- B 9
- C 7
- D 6

Answer: A

Explanation:

Expression = 5243 : 14 :: 4312 : ?

The second number is equal to the sum of digits of the first number.

Eg :- $5 + 2 + 4 + 3 = 14$

Similarly, $4 + 3 + 1 + 2 = 10$

=> Ans - (A)

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Question 5

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

- A Dehradun
- B Ranchi
- C Lucknow
- D Roorkee

Answer: D

Explanation:

Dehradun is the capital of Uttarakhand, Ranchi is the capital of Jharkhand and Lucknow is the capital of Uttar Pradesh, while Roorkee is not a capital city, hence it is the odd one out.

=> Ans - (D)

Question 6

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

A CEHJ

B HJMO

C RTWY

D PQTV

Answer: D

Explanation:

(A) : C (+2 letters) = E (+3 letters) = H (+2 letters) = J

(B) : H (+2 letters) = J (+3 letters) = M (+2 letters) = O

(C) : R (+2 letters) = T (+3 letters) = W (+2 letters) = Y

(D) : P (+1 letter) = Q (+3 letters) = T (+2 letters) = V

=> Ans - (D)

Question 7

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

A 583

B 275

C 286

D 427

Answer: D

Explanation:

The sum of first and third digit is equal to the middle digit, but $4 + 7 \neq 2$, hence 427 is the odd one out.

=> Ans - (D)

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Question 8

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

A 242

B 431

C 260

D 531

Answer: D

Explanation:

Except for 531, the sum of digits of all numbers is 8, hence 531 is the odd one out.

=> Ans - (D)

Question 9

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. ACE, BDF, CEG, ?

A DEF

B DFH

C DEH

D DFE

Answer: B

Explanation:

Expression : ACE, BDF, CEG, ?

The pattern followed in each letter of the terms is :

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

2nd letter : C (+1 letter) = D (+1 letter) = E (+1 letter) = F

3rd letter : E (+1 letter) = F (+1 letter) = G (+1 letter) = H

Thus, missing term = **DFH**

=> 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. ABC, PQR, DEF, STU, ?

A VWX

B GHI

C IJK

D GKL

Answer: B

Explanation:

Expression : ABC, PQR, DEF, STU, ?

The pattern followed is that every alternate term is a combination of successive alphabets in English alphabetical series.

Eg :- PQR, STU

Similarly, after ABC -> DEF, which is followed by = **GHI**

=> 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. 130, 450, 970, 1690, ?

- A 6210
- B 2601
- C 2600
- D 2610

Answer: D

Explanation:

The pattern followed is :

$$130 + 320 = 450$$

$$450 + 520 = 970$$

$$970 + 720 = 1690$$

$$1690 + 920 = \mathbf{2610}$$

=> Ans - (D)

Question 12

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.

Statement:

(I) Wages are determined by minimum wage legislation in each country.

(II) Increase in wage rate is the sign of growth in an economy.

Conclusions:

(I) Average wage rate signifies the wealth of a country.

(II) Minimum wage legislation does not account wage imbalances.

- A Only conclusion II follows
- B Conclusion I and II both follow
- C Neither I nor II follow
- D Only conclusion I follows

Answer: D

Explanation:

Increase in Average wage rate increases the wage rate which is the sign of the growth of the country. So Average wage rate signifies the wealth of the country. Hence Conclusion I follows the given statements.

Wages are determined by minimum wage legislation in each country but it doesn't mean that minimum wage legislation does not account wage imbalances. There maybe wage imbalances which is not a proper conclusion from given statement. Hence Conclusion II do not follow the given statements.

Hence, the correct answer is Option D

Question 13

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.
January, March, May, ?

- A June
- B April
- C August

D July

Answer: D

Explanation:

Months which have 31 days in chronological order are given.

= January -> March -> May -> July

=> Ans - (D)

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Question 14

Five planes, A, B, P, Q and R were saluting on Independence Day in such a way that R was second to the left of Q but to the immediate right of A. There was one plane between B and P. B was not at any of the ends. P and Q were neighbours. Who was at the left end?

A A

B B

C R

D Q

Answer: A

Explanation:

R was second to the left of Q but to the immediate right of A, => A R _ Q

There was one plane between B and P, => the last plane must be to the immediate right of Q.

Also, B was not at any of the ends, => B was between R and Q.

Arrangement :

A	R	B	Q	P
---	---	---	---	---

∴ A was at the left end.

=> Ans - (A)

Question 15

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

i. Prandial

ii. Preach

iii. Priam

iv. Price

v. Pseudo

A iii, iv, v, i, ii

B i, v, iv, ii, iii

C i, ii, iii, iv, v

D v, iii, iv, i, ii

Answer: C

Explanation:

As per the order of dictionary :

= Prandial -> Preach -> Priam -> Price -> Pseudo

≡ i, ii, iii, iv, v

=> Ans - (C)

Question 16

In a certain code language, "DURING" is written as "GRUFQD". How is "PICKED" written in that code language?

- A SAFFIIA
- B TGFHHA
- C SFFHHA
- D SFHFHA

Answer: C

Explanation:

"DURING" is written as "GRUFQD"

The pattern followed is :

D	U	R	I	N	G
(+3)	(-3)	(+3)	(-3)	(+3)	(-3)
G	R	U	F	Q	D

Similarly, for PICKED :

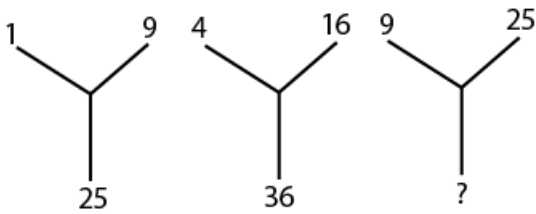
P	I	C	K	E	D
(+3)	(-3)	(+3)	(-3)	(+3)	(-3)
S	F	F	H	H	A

=> Ans - (C)

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Question 17

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



- A 47
- B 49
- C 50
- D 57

Answer: B

Explanation:

The pattern followed is that the numbers at the corresponding edges are squares of consecutive natural numbers.

Eg :- Top left : $(1)^2 = 1$, $(2)^2 = 4$, $(3)^2 = 9$

Top right : $(2)^2 = 4$, $(3)^2 = 9$, $(4)^2 = 16$

Similarly, $(5)^2 = 25$, $(6)^2 = 36$, $(7)^2 = 49$

Thus, missing term = 49

=> Ans - (B)

Question 18

If "x" stands for addition, "<" stands for subtraction, "+" stands for division, ">" stands for multiplication, "-" stands for equals to, "÷" stands for greater than and "=" stands for less than, which of the following holds true?

A $18 + 9 = 128 > 2$

B $16 + 9 \times 8 < 2 - 14$

C $8 \times 12 + 3 - 14 \times 2$

D $182 + 6 > 4 \div 1218$

Answer: A

Explanation:

(A) : $18 + 9 = 128 > 2$

$\equiv 18 \div 9 < 128 - 2$

L.H.S. = $9 < 126 =$ R.H.S. which is true.

=> Ans - (A)

Question 19

In the following question, which one set of letters when sequentially placed at the gaps in the given letter series shall complete it?
_n_p_no_m_ _p

A mmoopp

B mommpo

C mompon

D mompno

Answer: D

Explanation:

The pattern followed is that in groups of 4, the term 'mnop' is repeated.

= **mnop mnop mnop**

=> Ans - (D)

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Question 20

A man travels 10 km towards west, then he takes a turn towards northeast and travels 20 km in the direction. He again takes a turn towards southeast and covers 5 km. Taking starting point as the origin, in which direction is he now?

A Northeast

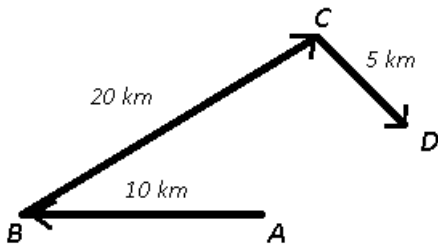
B Southeast

C South

D East

Answer: A

Explanation:



Let the man starts from point A and travels 10 km towards west to reach B, then he takes a turn towards north-east and travels 20 km to reach C. He again takes a turn towards south-east and covers 5 km to finally stop at point D.

Thus, he is north-east of his original position.

=> 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, 'V' can be represented by 21, 33 etc. and 'I' can be represented by 75,97 etc. Similarly, you have to identify the set for the word 'WHALE'.

Matrix 1:

	0	1	2	3	4
0	W	M	V	A	L
1	A	U	W	L	V
2	L	V	U	W	A
3	U	A	L	V	W
4	W	U	V	A	L

Matrix 2:

	5	6	7	8	9
5	E	H	U	I	V
6	V	U	H	E	I
7	I	E	U	H	V
8	U	I	E	V	H
9	H	V	I	U	E

A 23, 56, 10, 43, 68

B 34, 67, 24, 04, 55

C 40, 76, 03, 44, 99

D 01, 78, 31, 34, 76

Answer: B

Explanation:

(A) : 23, 56, 10, 43, 68 = WHAAE

(B) : 34, 67, 24, 04, 55 = **WHALE**

(C) : 40, 76, 03, 44, 99 = WEALE

(D) : 01, 78, 31, 34, 76 = MVAWE

=> Ans - (B)

Question 22

Pointing to a lady, Anju says, "She is the sister of my brother's mother". How is the lady related to Anju?

- A Motherinlaw
- B Niece
- C Aunt
- D Sister

Answer: C

Explanation:

Anju's brother's mother = Anju's mother

Now, that lady is Anju's mother's sister,

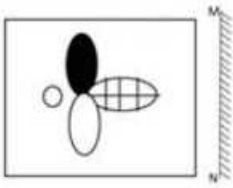
=> That lady is Anju's aunt.

=> Ans - (C)

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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 if the given figure?



- A
- B
- C
- D

Answer: A

Explanation:

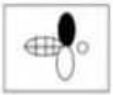
If a mirror is placed on the line MN,

The small circle on the left will be on the right in the mirror image

The curved part with lines on the right of the figure will be on the left in the mirror image

The facing of the figure to the left and right direction changes to opposite direction in mirror image(right facing changes to left and vice versa)

∴ The required mirror image is shown below



Hence, the correct answer is Option A

Question 24

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

Prime Minister, Chief Minister, Governor, State

a

- A
- B
- C
- D

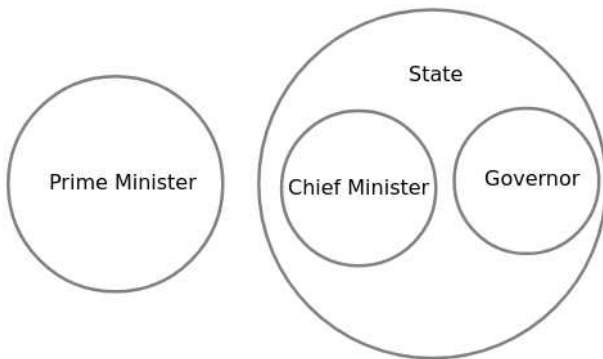
Answer: A

Explanation:

State has a Chief Minister and a Governor

Country has a Prime Minister

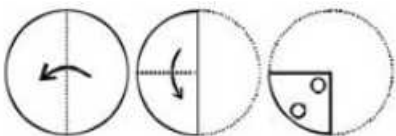
∴ The diagram that best represents the relationship is shown below



Hence, the correct answer is Option A

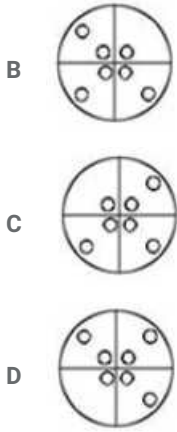
Question 25

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



A





Answer: A

Explanation:

When the paper is opened, the pattern of cutting will be similar in four parts of the paper.

When the paper is unfolded first to the top, two circles will appear similarly on the top part.

When the paper is unfolded again to the right, two circles each will appear similarly at the top right and bottom right part of the paper.

∴ When the paper is opened it will appear as shown below



Hence, the correct answer is Option A

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General Awareness

Instructions

For the following questions answer them individually

Question 26

Ajanta Caves is in

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

Answer: A

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Question 27

.....is a condition in which there is a deficiency of red cells or of haemoglobin in the blood.

- A Albinism
- B Propyria
- C Anaemia

D Keloid disorder

Answer: C

Question 28

Ananas comosus is the scientific name of

A Custard Apple

B Pineapple

C Bamboo

D Pomegranate

Answer: B

Question 29

Which organ produces insulin?

A Liver

B Thyroid gland

C Spleen

D Pancreas

Answer: D

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Question 30

Which of the following elements has the lowest melting point?

A Tin

B Hydrogen

C Carbon

D Sodium

Answer: B

Question 31

If demand curve for an electric tooth brush is $D = 25000 - 7P$ and supply curve is $S = 10000 + 8P$, find the equilibrium Price?

A Rs 150

B Rs 1000

C Rs 400

D Rs 50

Answer: B

Question 32

Match the characteristics with their market structure:

(a) $MR = MP$

(b) Elasticity of demand depends on pricing policies of rivals

A (a) Pure Monopoly, (b) Monopolistic competition

B (a) Pure competition, (b) Oligopoly

C (a) Pure competition, (b) Pure Monopoly

D (a) Pure Monopoly, (b) Oligopoly

Answer: B

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Question 33

.....is located in the Alwar district of Rajasthan.

A Dandeli Wildlife Sanctuary

B Sariska National Park

C Chinnar Wildlife Sanctuary

D Dudhwa National Park

Answer: B

Question 34

Which of the following disease is not caused by water pollution?

A Cholera

B Typhoid

C Asthma

D Diarrhoea

Answer: C

Question 35

BRICS is the acronym for an association of five major emerging national economies: Brazil, Russia, India, China and

A Saudi Arabia

B South Africa

C Singapore

D Sri Lanka

Answer: B

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Question 36

June 21 marks the winter solstice in theHemisphere.

- A Northern
- B Eastern
- C Western
- D Southern

Answer: D

Question 37

Nuclear bombs were dropped on Hiroshima and Nagasaki during the.....

- A World War I
- B Asian War I
- C Gulf War II
- D World War II

Answer: D

Question 38

Who invented "Coca Cola"?

- A Floyd Paxton
- B Les Paul
- C John Pemberton
- D Forrest Parry

Answer: C

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Question 39

An example of longitudinal waves (in gas as a medium) is

- A heat waves
- B radio waves
- C electromagnetic waves
- D sound waves

Answer: D

Question 40

In projectile motion, the total flight time is

- A equal to the time required to reach the maximum height
- B thrice the time required to reach the maximum height
- C four times the time required to reach the maximum height
- D twice the time required to reach the maximum height

Answer: D

Question 41

No of Fundamental rights recognized by the Indian constitution are

- A Five
- B Six
- C Seven
- D Eight

Answer: B

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Question 42

Lok Sabha is theHouse of the Parliament of India.

- A Lower
- B Upper
- C Left
- D Right

Answer: A

Question 43

In which of the following games the term "deuce" is used?

- A Kabaddi
- B Football
- C Cricket
- D Badminton

Answer: D

Question 44

Who wrote the book "As you like it"?

- A Stephen Hawkings
- B William Shakespeare
- C Vikram Seth
- D Vimal Kumar

Answer: B

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Question 45

Bhopal is the Capital City of

- A Himachal Pradesh
- B Goa
- C Gujarat
- D Madhya Pradesh

Answer: D

Question 46

In 1617 the British East India Company was given permission by to trade in India.

- A Babur
- B Akbar
- C Aurangzeb
- D Jahangir

Answer: D

Question 47

Highest Civilian Honour received by Shri Shri Ravi Shankar is

- A Padma Shri
- B Padma Bhushan
- C Padma Vibhushan
- D Bharat Ratna

Answer: C

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Question 48

What chemical is injected into a person's body when an ant bites?

- A Formic Acid
- B Acetic Acid
- C Tartaric Acid
- D Citric Acid

Answer: A

Question 49

.....is a form of computer data storage which stores frequently used program instructions to increase the general speed of a system.

- A Arithmetic Logic Unit
- B Integrated Circuit
- C Random Access Memory
- D Portable Document Format

Answer: C

Question 50

Malayalam is the official language of

- A Puducherry
- B Lakshadweep
- C Daman and Diu
- D Delhi

Answer: B

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English

Instructions

For the following questions answer them individually

Question 51

Rearrange the parts of the sentence in correct order.

If per capita income is taken

As the measure then we are

Qaway from 'great power' status

Rstill some distance

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

Answer: A

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Question 52

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.

My sister will bake a dozen cakes for the fair.

- A For the fair, a dozen cakes would be baked by my sister.
- B For the fair, a dozen cakes would have been baked by my sister.
- C For the fair, a dozen cakes will be baked by my sister.
- D For the fair, a dozen cakes will have been baked by my sister.

Answer: C

Question 53

Improve the bracketed part of the sentence. The naughty boy made (many a mischief).

- A much mischief
- B many mischief
- C many a mischiefs
- D no improvement

Answer: A

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.

My mother likes tome by showing everyone my baby pictures.

- A stun
- B annoy
- C shame
- D embarrass

Answer: D

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Question 55

Select the antonym of agonising

- A vehement
- B fierce

C excruciating

D cordial

Answer: D

Question 56

Select the word with the correct spelling.

A motlyiest

B plummets

C disgorg

D bangalow

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'.

He woke on, rising(A)/to a sitting position(B)/and rubbed his eyes briskly.(C)/No error(D)

A A

B B

C C

D D

Answer: A

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Question 58

Select the synonym of
to jeopardise

A to chaperone

B to picket

C to imperil

D to escort

Answer: C

Question 59

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.
To increase rapidly in number; multiply.

A to proliferate

B to procreate

C to propagate

D to escalate

Answer: A

Question 60

Improve the bracketed part of the sentence. Grandfather has said so out of affection, do not take (to) heart.

A into

B it to

C it by

D no improvement

Answer: B

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Question 61

Rearrange the parts of the sentence in correct order.

India has already made
Psubstantial concessions
Qto enable a consensus
Rfor the Paris pact

A QRP

B PQR

C RPQ

D QPR

Answer: B

Question 62

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.

I was takenby the server's rude comment about my hair.

A away

B from

C aback

D off

Answer: C

Question 63

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.

Manish said, "Where is she going?"

- A Manish asked that where she was going.
- B Manish asked that where she is going.
- C Manish asked where she was going.
- D Manish asked that where she has been going.

Answer: C

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Question 64

Select the synonym of evicted

- A congenial
- B sympathetic
- C cordial
- D ousted

Answer: D

Question 65

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase. to easily bent; flexible.

- A putty
- B pliable
- C rigid
- D ductile

Answer: B

Question 66

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'.

I wonder if they(A)/could treat me nicely(B)/if I went there again.(C)/No error(D)

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

Answer: B

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Question 67

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

- A to bore someone by talking ceaselessly
- B to discourage someone who is going to start a new venture
- C reprimand someone severely
- D to save someone

Answer: C

Question 68

Select the antonym of **discrepant**

- A contrary
- B dissonant
- C harmonious
- D variance

Answer: C

Question 69

In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase. **to chip on his shoulder**

- A to have huge responsibilities on one's shoulders
- B uniform decorated with stars and medals
- C wearing your battle scars like medals
- D holding a grudge or grievance that readily provokes a fight

Answer: D

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Question 70

Select the word with the correct spelling.

- A flooring
- B altituede
- C purveyour
- D snobish

Answer: A

Explanation:

Start Group:

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.

That is why publicly invoking these symbols has to be an act of responsible citizenship and not self.....(1)..... demagoguery, but the difference can be hard to(2)..... The problem with emotive symbols is that(3).....they can multiply the force of arguments, they cannot replace the arguments.....(4)..... All persuasion harnesses symbols but principled persuasion must also provide arguments that can be(5)..... debated.

Question 71

An act of responsible citizenship and not self.....demagoguery

- A efficacy
- B serving
- C esteem
- D reference

Answer: B

Question 72

But the difference can be hard to

- A tell
- B say
- C speak
- D mention

Answer: A

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Question 73

The problem with emotive symbols is thatthey can multiply the force of arguments

- A tough
- B though
- C through
- D Thorough

Answer: B

Question 74

They cannot replace the arguments.....

- A yourselves

- B yourself
- C by themselves
- D themselves

Answer: D

Question 75

principled persuasion must also provide arguments that can bedebated.

- A absurdly
- B carefully
- C rationally
- D friendly

Answer: C

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Mathematics

Instructions

For the following questions answer them individually

Question 76

20% discount is offered on an item. By applying a promo code the customer wins 15% cash back. What is the effective discount?

- A 30.8 percent
- B 30 percent
- C 12 percent
- D 32 percent

Answer: D

Explanation:

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

$$\begin{aligned} \text{Amount after 20 \% discount} &= 100x - \frac{20}{100} \times 100x \\ &= 100x - 20x = \text{Rs. } 80x \end{aligned}$$

$$\begin{aligned} \text{Selling price after 15 \% cashback} &= 80x - \frac{15}{100} \times 80x \\ &= 80x - 12x = \text{Rs. } 68x \end{aligned}$$

$$\Rightarrow \text{Total discounted amount} = 100x - 68x = \text{Rs. } 32x$$

$$\therefore \text{Effective discount} = \frac{32x}{100x} \times 100 = 32\%$$

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Question 77

What is the HCF (highest common factor) of 57 and 513?

- A 10
- B 57
- C 3
- D 27

Answer: B

Explanation:

Factors of 57 = 1, 3, 19, 57

Factors of 513 = 1, 3, 9, 19, 27, 57, 171, 513

The common factors are = 1, 3, 19, 57

=> Highest common factor = 57

=> Ans - (B)

Question 78

Murad can do a piece of work in 33 hours. If he is joined by Joel who is 100% more efficient, in what time will they together finish the work?

- A 4 hours
- B 6 hours
- C 2 hours
- D 11 hours

Answer: D

Explanation:

Let total work to be done be 33 units.

Murad's efficiency = $\frac{33}{33} = 1$ units/hour

Joel's efficiency = $1 + \frac{100}{100} \times 1 = 2$ units/hour

=> Murad's and Joel's 1 day's work together = $1 + 2 = 3$ units/hour

∴ Time taken by them together = $\frac{33}{3} = 11$ hours

=> Ans - (D)

Question 79

Simplify $\frac{437bxaz}{23ab}$.

- A $17xzb$
- B $9xz$
- C $19xz$
- D $19ab$

Answer: C

Explanation:

Expression : $\frac{437bxaz}{23ab}$

= $\frac{437}{23} \times \frac{abxz}{ab}$

$$= 19xz$$

=> Ans - (C)

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Question 80

Which of the following quadratic equations has equal roots?

A $x^2 + 14x - 49 = 0$

B $x^2 + 7x + 49 = 0$

C $x^2 - 7x - 49 = 0$

D $x^2 + 14x + 49 = 0$

Answer: D

Explanation:

A quadratic equation: $ax^2 + bx + c = 0$ has equal roots iff Discriminant, $D = b^2 - 4ac = 0$

(A): $x^2 + 14x - 49 = 0$

$$\Rightarrow D = (14)^2 - 4(1)(-49) = 196 + 196 = 392 \neq 0$$

(B): $x^2 + 7x + 49 = 0$

$$\Rightarrow D = (7)^2 - 4(1)(49) = 49 - 196 = -147 \neq 0$$

(C): $x^2 - 7x - 49 = 0$

$$\Rightarrow D = (-7)^2 - 4(1)(-49) = 49 + 196 = 245 \neq 0$$

(D): $x^2 + 14x + 49 = 0$

$$\Rightarrow D = (14)^2 - 4(1)(49) = 196 - 196 = 0$$

Thus, the equation: $x^2 + 14x + 49 = 0$ has equal roots.

Question 81

If $4 + 3x \leq 6 + x$ and $3x + 5 > 2 + 2x$; then x can take which of the following values?

A 2

B -2

C 4

D -4

Answer: B

Explanation:

Expression 1: $4 + 3x \leq 6 + x$

$$\Rightarrow 3x - x \leq 6 - 4 \Rightarrow 2x \leq 2$$

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

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

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

$$\Rightarrow x > -3 \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $-3 < x \leq 1$

Thus, x can take values = -2,-1,0,1

=> Ans - (B)

Question 82

The first and last terms of an arithmetic progression are 37 and -18. If the sum of the series is 114, then it has how many terms?

- A 13
- B 12
- C 14
- D 15

Answer: B

Explanation:

In an arithmetic progression with first term, $a = 37$, last term, $l = -18$

Let number of terms = n

$$\therefore \text{Sum of A.P.} = \frac{n}{2}(a + l) = 114$$

$$\Rightarrow \frac{n}{2}(37 - 18) = 114$$

$$\Rightarrow 19n = 114 \times 2 = 228$$

$$\Rightarrow n = \frac{228}{19} = 12$$

=> Ans - (B)

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Question 83

ΔABC is similar to ΔDEF . Length of AB is 12 cm and length of the corresponding side DE is 8 cm. What is the ratio of Perimeter of ΔABC : Perimeter of ΔDEF ?

- A 9:4
- B 4:9
- C 3:2
- D 2:3

Answer: C

Explanation:

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

Also, length of AB = 12 cm and length of the corresponding side DE = 8 cm

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

$$= \frac{12}{8} = \frac{3}{2}$$

\therefore The required ratio is 3 : 2

=> Ans - (C)

Question 84

What is the slope of the line perpendicular to the line passing through the points (4,5) and (3,2)?

- A 2
- B 3/7
- C -3/7
- D -1/3

Answer: D

Explanation:

Slope of line passing through points (x_1, y_1) and $(x_2, y_2) = \frac{(y_2 - y_1)}{(x_2 - x_1)}$

Points = A (3,2) and B (4,5)

$$\Rightarrow \text{Slope of AB} = \frac{5-2}{4-3} = 3$$

Product of slopes of two perpendicular lines = -1

Let slope of line perpendicular to AB = m

$$\Rightarrow m \times 3 = -1$$

$$\Rightarrow m = \frac{-1}{3}$$

Question 85

Find two numbers such that their mean proportion is 12 and third proportion is 768.

- A 3 and 24
- B 3 and 48
- C 6 and 48
- D 6 and 24

Answer: B

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 $y = 12$

$$\Rightarrow xy = (12)^2 = 144 \text{ -----(i)}$$

Third proportion = 768

$$\Rightarrow y^2 = x \times 768 \text{ -----(ii)}$$

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

$$\Rightarrow y^2 = \frac{144}{y} \times 768$$

$$\Rightarrow y^3 = (12)^3 \times (4)^3 = (12 \times 4)^3$$

$$\Rightarrow y = 12 \times 4 = 48$$

$$\text{Substituting it in equation(i), } \Rightarrow x = \frac{144}{48} = 3$$

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Question 86

In the first 43 overs of a cricket match, the run rate was 5 runs/over. Calculate the required run rate in the remaining 7 overs to reach the target of 285 runs?

- A 10.6
- B 11.2
- C 10
- D 9.4

Answer: C

Explanation:

Run rate in 43 overs = 5 runs/over

=> Runs scored in 43 overs = $43 \times 5 = 215$

Runs needed to score in 7 overs = $285 - 215 = 70$

=> Run rate required = $\frac{70}{7} = 10$

=> Ans - (C)

Question 87

Find the sum of interior angles of a decagon?

- A 1620°
- B 2520°
- C 1800°
- D 1440°

Answer: D

Explanation:

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

Number of sides in a decagon, $n = 10$

=> Sum of interior angles = $(10 - 2) \times 180^\circ$

= $8 \times 180 = 1440^\circ$

=> Ans - (D)

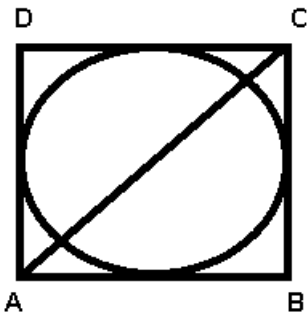
Question 88

A circle is inscribed in a square. If the length of the diagonal of the square is $14\sqrt{2}$ cm, what is the area of the circle?

- A 308 sq cm
- B 462 sq cm
- C 154 sq cm
- D 616 sq cm

Answer: C

Explanation:



Length of AC = $14\sqrt{2}$ cm

Let side of square = x cm = Diameter of circle

$$\text{In } \triangle ABC, \Rightarrow (AB)^2 + (BC)^2 = (AC)^2$$

$$\Rightarrow (x)^2 + (x)^2 = (14\sqrt{2})^2$$

$$\Rightarrow 2x^2 = 392$$

$$\Rightarrow x^2 = \frac{392}{2} = 196$$

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

Thus radius of circle = $\frac{14}{2} = 7$ cm

\therefore Area of circle = πr^2

$$= \frac{22}{7} \times (7)^2 = 22 \times 7 = 154 \text{ cm}^2$$

SSC CGL Previous Papers (DOWNLOAD PDF)

Question 89

The total surface area of a hemisphere is 41.58 sq cm, find its radius.

- A 4.2 cm
- B 0.7 cm
- C 1.05 cm
- D 2.1 cm

Answer: D

Explanation:

Let radius of hemisphere = r cm

$$\text{Total surface area of hemisphere} = 3\pi r^2 = 41.58$$

$$\Rightarrow r^2 = \frac{41.58}{3\pi}$$

$$\Rightarrow r^2 = 13.86 \times \frac{7}{22}$$

$$\Rightarrow r^2 = 0.63 \times 7 = 4.41$$

$$\Rightarrow r = \sqrt{4.41} = 2.1 \text{ cm}$$

\Rightarrow Ans - (D)

Question 90

A man travels 800 km in partly by rail and partly by steamer. He spends 7 hours more time on steamer. If the velocity of the steamer is 20 km/hr and the velocity of rail is 55 km/hr, how much distance does he cover by steamer?

- A 316 km
- B 379 km
- C 474 km
- D 569 km

Answer: A

Explanation:

Let distance covered by steamer = d km

=> Distance covered by rail = $(800 - d)$ km

Let time taken on rail = t hours and time taken on steamer = $(t + 7)$ hours

Speed of rail = 55 km/hr and speed of steamer = 20 km/hr

Using, speed = distance/time

For steamer, $\frac{d}{t+7} = 20$

=> $d = 20t + 140$ -----(i)

For rail, $\frac{800-d}{t} = 55$

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

=> $800 - (20t + 140) = 55t$

=> $800 - 140 = 55t + 20t = 75t$

=> $t = \frac{660}{75} = 8.8$ hours

Substituting value of t in equation (i), => $d = (20 \times 8.8) + 140$

= $176 + 140 = 316$ km

Question 91

If $\cot 4\pi/3 = x$, then the value of x is

- A 1
- B $1/\sqrt{3}$
- C $\sqrt{3}$
- D 1

Answer: B

Explanation:

Expression : $\cot 4\pi/3 = x$

= $\cot(\pi + \frac{\pi}{3})$

= $\cot(\frac{\pi}{3}) = \frac{1}{\sqrt{3}}$

=> Ans - (B)

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Question 92

If the amount received at the end of 2nd and 3rd year at Compound Interest on a certain Principal is Rs 28090, and Rs 29775.4 respectively, what is the rate of interest?

- A 6 percent
- B 3 percent
- C 12 percent
- D 10 percent

Answer: A

Explanation:

Compound interest at the end of 2nd year = Rs. 28,090

Compound interest at the end of 3rd year = Rs. 29,775.4

=> Difference = 29775.4 - 28090 = Rs. 1685.4

This is the interest obtained on the amount of 2nd year.

∴ Rate of interest, $r = \frac{1685.4}{28090} \times 100 = 6\%$

=> Ans - (A)

Question 93

If $\tan \frac{A}{2} = x$, then the value of x is

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

B $\frac{(1-\cos A)}{(1+\cos A)}$

C $\frac{(1+\cos A)}{(1-\cos A)}$

D $\sqrt{\frac{(1-\cos A)}{(1+\cos A)}}$

Answer: D

Explanation:

Given : $\tan\left(\frac{A}{2}\right) = x$

Using double angle formula, $\tan(A) = \frac{2x}{1-x^2}$

=> $\tan^2(A) = \frac{4x^2}{1-2x^2+x^4}$

Also, $\sec^2(A) = 1 + \tan^2(A)$

=> $\sec^2(A) = 1 + \frac{4x^2}{1-2x^2+x^4}$

=> $\sec^2(A) = \frac{(1-2x^2+x^4)+(4x^2)}{1-2x^2+x^4}$

=> $\sec^2(A) = \frac{1+2x^2+x^4}{1-2x^2+x^4}$

=> $\sec^2(A) = \left(\frac{1+x^2}{1-x^2}\right)^2$

=> $\sec(A) = \frac{1+x^2}{1-x^2}$

=> $\cos(A) = \frac{1-x^2}{1+x^2}$

=> $\cos(A) + x^2\cos(A) = 1 - x^2$

=> $x^2[1 + \cos(A)] = 1 - \cos(A)$

$$\Rightarrow x = \sqrt{\frac{1-\cos(A)}{1+\cos(A)}}$$

=> Ans - (D)

Question 94

If $\tan^2 A / (\sec A - 1)^2 = x$, then the value of x is

- A $\frac{(1+\operatorname{cosec} A)}{(1-\operatorname{cosec} A)}$
- B $(1+\cos A)(1-\cos A)$
- C $\frac{(1+\cos A)}{(1-\cos A)}$
- D $(1+\operatorname{cosec} A)(1-\operatorname{cosec} A)$

Answer: C

Explanation:

Expression : $\tan^2 A / (\sec A - 1)^2 = x$

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

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

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

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

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

=> Ans - (C)

SSC CHSL Important Questions and Answers (Download PDF)

Question 95

The total cost of a washing machine with a toaster was Rs 10500. The toaster was sold at a profit of 22% and the washing machine at a loss of 12%. If the sale price was the same in both the items, then the cost price of the cheaper item was

- A Rs 4100
- B Rs 3250
- C Rs 7100
- D Rs 4400

Answer: D

Explanation:

Let cost price of washing machine = Rs. $100x$

=> Cost price of toaster = Rs. $(10,500 - 100x)$

Selling price of toaster (22% profit) = Selling price of washing machine (12% loss)

$$\Rightarrow \frac{122}{100} \times (10,500 - 100x) = \frac{88}{100} \times 100x$$

$$\Rightarrow 12810 - 122x = 88x$$

$$\Rightarrow 12810 = 88x + 122x = 210x$$

$$\Rightarrow x = \frac{12810}{210} = 61$$

$$\Rightarrow \text{Cost price of washing machine} = 100 \times 61 = \text{Rs.}6100$$

$$\Rightarrow \text{Cost price of toaster} = 10,500 - 6,100 = \text{Rs.}4400$$

\(\therefore\) Toaster is cheaper with cost price = Rs. 4,400

Question 96

The price of an article is cut by 24%, to restore to its original value, the new price must be increased by

- A 24 percent
- B 19.35 percent
- C 30 percent
- D 31.58 percent

Answer: D

Explanation:

Let the original price of the article = Rs. 100

$$\text{If the price is cut by 24\%, } \Rightarrow \text{New price} = \frac{100-24}{100} \times 100 = \text{Rs.}76$$

$$\begin{aligned} \text{To restore to its original value the new price must be increased by} &= \frac{100-76}{76} \times 100 \\ &= \frac{2400}{76} \approx 31.58\% \end{aligned}$$

\(\Rightarrow\) Ans - (D)

Question 97

Read the given data and answer the given data ?

	No of Employees	Annual salary in lakhs	Bonus Percent of salary
Manager	2	48	50%
Executive	12	8	30%
Trainee	1	4	10%

What is average bonus in rupees ?

- A 7720005
- B 200000
- C 514667
- D 268000

Answer: C

Explanation:

$$\text{Total bonus of managers (in lakh)} = 2 \times 48 \times \frac{50}{100} = 48 \text{ lakhs}$$

$$\text{Total bonus of executive (in lakh)} = 12 \times 8 \times \frac{30}{100} = 28.8 \text{ lakhs}$$

$$\text{Total bonus of trainee (in lakh)} = 1 \times 4 \times \frac{10}{100} = 0.4 \text{ lakhs}$$

$$\Rightarrow \text{Average bonus in rupees} = \frac{(48+28.8+0.4)}{(2+12+1)}$$

$$= \frac{77.2}{15} = 5.14667 \text{ lakhs} = 5,14,667$$

\(\Rightarrow\) Ans - (C)

SSC CHSL Study Material

Question 98

Read the following data and answer the questions

	2011	2012	2013	2014	2015
Company A	1000	2000	4000	4000	5000
Company B	4000	4000	1000	2000	1000
Company C	3000	3000	1000	2000	1000

For which of the following pairs of years the total exports from the three Companies together are equal? (Note: Figures given are in lath rupees)

- A 2011 & 2013
- B 2013 & 2015
- C 2011 & 2012
- D 2014 & 2011

Answer: D

Explanation:

Total exports from the three companies together in :

$$2011 = 1000 + 4000 + 3000 = 8000$$

$$2012 = 2000 + 4000 + 3000 = 10000$$

$$2013 = 4000 + 1000 + 1000 = 6000$$

$$2014 = 4000 + 2000 + 2000 = 8000$$

$$2015 = 5000 + 1000 + 1000 = 7000$$

Clearly, total exports in 2011 and 2014 are equal to 8000

=> Ans - (D)

Question 99

Read the data and answer the questions

Years	Profit or (-loss) in crores
2011	5
2012	15
2013	25
2014	-5
2015	25

What is the total loss or the profit of the company in last 5 years?

- A Loss of Rs 55 crores
- B Profit of Rs 65 crores
- C Profit of Rs 55 crores
- D Loss of Rs 65 crores

Answer: B

Explanation:

Total profit or loss in Rs. crore in last 5 years

$$= 5 + 15 + 25 - 5 + 25$$

= Rs. 65 crore

Since, it is positive, thus profit of Rs. 65 crore

=> Ans - (B)

Question 100

Read the data and answer the given questions

India's Exports in 2015	Value in Million US \$
Jewellery	750
Softyware	950
Cotton	775
Steel	525
Electronics	700

Cotton was the what percent of the total exports

A 23.45 percent

B 20.95 percent

C 25.95 percent

D 18.45 percent

Answer: B

Explanation:

Value in millions of cotton = 775

Total exports = 750 + 950 + 775 + 525 + 700 = 3700

=> % of cotton in total exports = $\frac{775}{3700} \times 100$

= $\frac{775}{37} = 20.95\%$

=> Ans - (B)

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