



SSC CHSL 11 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. Luminous intensity : Candela : : Pressure : ?

- A Radian
- B Newton
- C Pascal
- D Joule

Answer: C

Explanation:

Candela is the S.I. unit of Luminous intensity, similarly unit to measure pressure is *pascal*.

=> Ans - (C)

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Question 2

Select the related word/letters/number from the given alternatives. APPARENT : RENTAPPA : : MUSCULAR : ?

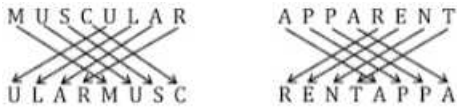
- A ULAMMUSC
- B ULARMUSC
- C UMAMLUSC
- D ULARMUCS

Answer: B

Explanation:

Expression = APPARENT : RENTAPPA : : MUSCULAR : ?

The pattern followed is :



Thus, MUSCULAR : **ULARMUSC**

=> Ans - (B)

Question 3

Select the related word/letters/number from the given alternatives. PEON : QRHS : : JOCK : ?

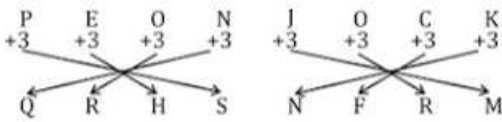
- A NFRM
- B NFMR
- C NEFM
- D NFMM

Answer: A

Explanation:

Expression = PEON : QRHS :: JOCK : ?

The pattern followed is :



Thus, JOCK : **NFRM**

=> Ans - (A)

Question 4

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

34 : 81 :: 23 : ?

- A 8
- B 16
- C 4
- D 12

Answer: A

Explanation:

$$34 = 3^4 = 81$$

Using the same logic,

$$23 = 2^3 = 8.$$

Therefore, option A is the right answer.

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Question 5

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

- A Tetanus
- B Syphilis
- C Plague
- D Malaria

Answer: D

Explanation:

Except Malaria other three are caused by bacteria, hence it is the odd one out.

=> Ans - (D)

Question 6

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

- A QJ
- B SH

C LN

D UF

Answer: C

Explanation:

Except LN other three are set of corresponding opposite letters, hence it is the odd one out.

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

=> Ans - (C)

Question 7

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

A 5125

B 8564

C 7343

D 6216

Answer: B

Explanation:

The last three digits is the cube of first digit.

$$5^3 = 125, 7^3 = 343 \text{ and } 6^3 = 216$$

=> Ans - (B)

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Question 8

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

A 529

B 549

C 731

D 525

Answer: A

Explanation:

Among the given numbers, only $529 = (23)^2$ is a perfect square, hence it is the odd one out.

=> Ans - (A)

Question 9

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. I, V, ?, L

A C

B D

C M

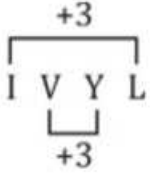
D Y

Answer: D

Explanation:

Expression : I, V, ?, L

The pattern followed is :



Thus, missing term = Y

=> Ans - (D)

Question 10

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

A MOQ

B NOP

C GHI

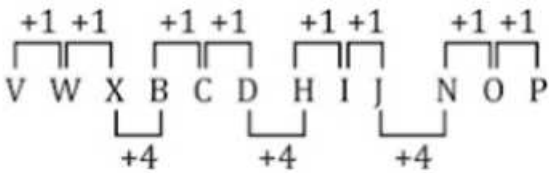
D TUV

Answer: B

Explanation:

Expression : VWX, BCD, HIJ, ?

The pattern followed is :



Thus, missing term = NOP

=> 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. MN, PQ, TU, YZ, ?

A YZ

B AB

C EF

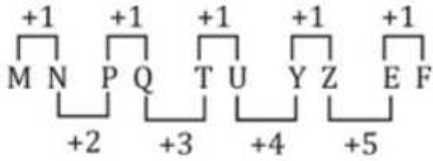
D EJ

Answer: C

Explanation:

Expression : MN, PQ, TU, YZ, ?

The pattern followed is :



Thus, missing term = EF

=> 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.
10, 29, 66, 127, ?

A 330

B 115

C 218

D 273

Answer: C

Explanation:

The pattern followed is :

$$2^3 + 2 = 10$$

$$3^3 + 2 = 29$$

$$4^3 + 2 = 66$$

$$5^3 + 2 = 127$$

$$6^3 + 2 = 218$$

=> Ans - (C)

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.

Statement:

(I) A graduate is a man.

(II) This thief is a graduate.

Conclusions:

(I) This thief is a man.

(II) Some men are thieves.

A Conclusion I follows

B Conclusion II follows

C Neither I nor II follows

D Both I and II follows

Answer: D

Explanation:

The basic diagram for the given statements is



(I) This thief is a man

From the basic diagram, the thief is a man. Hence conclusion I follows.

(II) Some men are thieves

From the basic diagram, some men are thieves. Hence conclusion II follows.

∴ Both conclusion I and conclusion II follows the given statements.

Hence, the correct answer is Option D

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Question 14

The average temperature of a town in the first six days of a month was 410°C and the sum of the temperatures of the first five days of the same month was 2010°C . What was the temperature on the sixth day of the month?

- A 400°C
- B 450°C
- C 460°C
- D 500°C

Answer: B

Explanation:

Average temperature of a town in the first six days = 410°C

\Rightarrow Sum of temperatures in 6 days = $6 \times 410 = 2460^{\circ}\text{C}$

Sum of the temperatures of the first five days of the same month = 2010°C

\therefore Temperature on the sixth day of the month = $2460 - 2010 = 450^{\circ}\text{C}$

\Rightarrow Ans - (B)

Question 15

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

- i. Uniform
- ii. Unitary
- iii. Umbrella
- iv. Unicorn

A iii, i, iv, ii

B iii, iv, ii, i

C iii, iv, i, ii

D iv, i, ii, iii

Answer: C

Explanation:

As per the order of dictionary :

= Umbrella -> Unicorn -> Uniform -> Unitary

≡ iii, iv, i, ii

=> Ans - (C)

Question 16

In a certain code language, "ARMS" is written as "5467" and "LIAR" is written as "1254". How is "SMALL" written in that code language?

A 76521

B 76512

C 76511

D 76544

Answer: C

Explanation:

The codes for each letter is given :

S -> 7

M -> 6

A -> 5

L -> 1

L -> 1

Thus, SMALL : **76511**

=> Ans - (C)

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Question 17

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

15	30	20
6	8	5
84	152	?

A 400

B 150

C 100

D 625

Answer: C

Explanation:

The pattern followed is that the last number in each column is obtained by adding the other two numbers and multiplying the result by 4.

$$\text{Eg :- } (15 + 6) \times 4 = 21 \times 4 = 84$$

$$(30 + 8) \times 4 = 38 \times 4 = 152$$

$$\text{Similarly, } (20 + 5) \times 4 = 25 \times 4 = 100$$

=> Ans - (C)

Question 18

If "#" means "subtraction", "&" means "division", "@" means "addition" and "%" means "multiplication", then $505 \& 5 \# 4 @ 20 \% 5 = ?$

A 211

B 197

C 210

D 195

Answer: B

Explanation:

Expression : $505 \& 5 \# 4 @ 20 \% 5 = ?$

$$\equiv 505 \div 5 - 4 + 20 \times 5$$

$$= \left(\frac{505}{5}\right) + (-4) + (20 \times 5)$$

$$= 101 - 4 + 100 = 197$$

=> Ans - (B)

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 ?
MN_O_NN_M_NO

A NMMN

B NMON

C MNOO

D NMMM

Answer: B

Explanation:

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

= MNNO MNNO MNNO

=> Ans - (B)

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Question 20

Sonal is standing to the north of Amar and to the west of Mahi. In which direction is Mahi standing with respect to Amar?

A South-West

B North-West

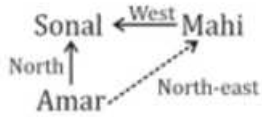
C North-East

D South-East

Answer: C

Explanation:

Sonal is standing to the north of Amar and to the west of Mahi.



Thus, Mahi is standing north-east of Amar.

=> Ans - (C)

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, 'E' can be represented by 68, 99 etc. and 'N' can be represented by 20, 31 etc. Similarly, you have to identify the set for the word 'LION'.

Matrix - I

	0	1	2	3	4
0	G	T	G	D	O
1	I	G	L	F	I
2	N	V	Y	G	F
3	R	N	V	S	E
4	O	L	F	B	L

Matrix - II

	5	6	7	8	9
5	F	N	L	R	I
6	O	I	F	E	O
7	N	R	S	L	F
8	R	L	W	O	Y
9	I	V	E	H	E

A 41, 10, 69, 76

B 86, 69, 04, 41

C 44, 59, 88, 20

D 57, 66, 31, 04

Answer: C

Explanation:

(A) : 41, 10, 69, 76 = LIOR

(B) : 86, 69, 04, 41 = LOOL

(C) : 44, 59, 88, 20 = **LION**

(D) : 57, 66, 31, 04 = LINO

=> Ans - (C)

Question 22

A boy and a girl are playing in a park. The only daughter of the maternal grandfather of the girl, is the sister of the boy's father. How is the boy related to the girl?

A Father

B Grandfather

C Son

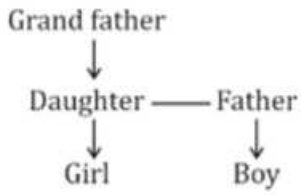
D Cousin

Answer: D

Explanation:

The only daughter of the maternal grandfather of the girl, is the sister of the boy's father.

Relation is :



Thus, the boy and girl 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 correct image of the given figure?



A



B



C



D



Answer: C

Explanation:

A vertical mirror is placed, so the object on the left will appear right in reverse position and vice-versa.

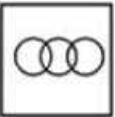
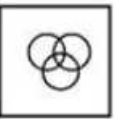
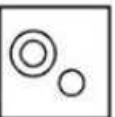
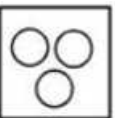
So only one of the curved line at the bottom is extended, thus the second and last options will be eliminated.

Also, in the question figure, the curved line is pointing towards left, hence it will appear on the right side, hence the third option is the correct image.

=> Ans - (C)

Question 24

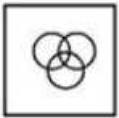
Identify the diagram that best represents the relationship among the given classes, Singer, Musician, Businessman

- A 
- B 
- C 
- D 

Answer: B

Explanation:

A singer can be either a musician or a businessman, similarly a musician can be either a singer or businessman, thus of them will intersect, hence the venn diagram that best describes above relation is :


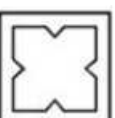




=> Ans - (B)

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 ?



- A 
- B 
- C 
- D 

Answer: A

Explanation:

When the paper is unfolded first to the top, two triangular cuts will appear on the top part.

When the paper is unfolded again to the bottom, four triangular cuts two each on the right and bottom part of the paper.

∴ When the paper is unfolded 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

Which of the following is a volatile memory of a computer?

- A Secondary Memory
- B Cache memory
- C RAM
- D ROM

Answer: C

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Question 27

Postage Meter was invented by

- A Fyodor Pirotsky
- B Arthur Pitney
- C Fritz Pfleumer
- D Stephen Perry

Answer: B

Question 28

Ringworm is a disease caused by

- A Fungi
- B Bacteria
- C Virus
- D Flies

Answer: A

Question 29

Mangifera indica is the scientific name of

- A Guava
- B Mango
- C Amla
- D Jack fruit

Answer: B

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Question 30

Crabs belongs to the phylum

- A Mollusca
- B Cnidaria
- C Arthropoda
- D Platyhelminthes

Answer: C

Question 31

Who invented the modern periodic table?

- A Faraday
- B Mendeleev
- C Newton
- D Bohr

Answer: B

Question 32

Isobars have

- A Same mass numbers but different atomic numbers
- B Different mass numbers but same atomic numbers
- C Same mass and atomic numbers
- D Different mass and atomic numbers

Answer: A

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Question 33

The famous Brihadeshwara Temple is located in

- A Madurai
- B Thanjavur
- C Kanchipuram
- D Rameshwaram

Answer: B

Question 34

Maithili is primarily spoken in which state?

- A Bihar
- B Assam
- C West Bengal
- D Meghalaya

Answer: A

Question 35

If hiring an extra worker increases a factory's output from 1000 to 1200 units per day, but the factory has to reduce the price of its product from Rs. 25 to Rs. 24 per unit to sell the additional output, the marginal revenue product of the last worker is

- A Rs. 3800
- B Rs. 200
- C Rs. 4000
- D Rs. 100

Answer: A

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Question 36

Which law states that bad money drives good money out of circulation?

- A Wagner's law
- B Grimm's law
- C Gresham's law
- D Keynes' law

Answer: C

Question 37

Which is the protocol signed to reduce production of CFC?

- A CFC Protocol
- B IR Protocol
- C Montreal Protocol
- D UV Protocol

Answer: C

Question 38

Malachite is an ore/mineral of

- A Lead
- B Manganese
- C Mercury
- D Copper

Answer: D

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Question 39

Pune was once known as the capital of

- A Scindias
- B Holkars
- C Bhosales
- D Peshwas

Answer: D

Question 40

Total number of countries in the world are

- A 125
- B 165
- C 255
- D 195

Answer: D

Question 41

Which among the following is false about Earth?

- A It is the densest planet.
- B It is the fifth largest planet.
- C It is also known as red planet.
- D It is the third planet from the sun.

Answer: C

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Question 42

Anti-apartheid activistwas imprisoned for 27 years by the South African government in 1962.

- A Thabo Mbeki
- B Kgalema Motlanthe
- C Nelson Mandela
- D Evelyn Mase

Answer: C

Question 43

Chand Bibi was the ruler of

- A Ahmednagar
- B Bijapur
- C Satara
- D Golconda

Answer: A

Question 44

.....is the 2016 Oscar Winner for Best Director.

- A Alejandro G. Inarritu
- B Adam McKay
- C George Miller
- D Tom McCarthy

Answer: A

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Question 45

Which among the following will be a negative ion?

- A If it has more electrons than protons
- B If it has more electrons than neutrons
- C If it has more protons than electrons
- D If it has more protons than neutrons

Answer: A

Question 46

Why metals conduct electricity?

- A Because of low melting point
- B Because of high tensile strength
- C Because of free electrons
- D Because of high atomic density

Answer: C

Question 47

To become a member of the Rajya Sabha a person should be at leastyears old.

- A 18
- B 30
- C 36
- D 24

Answer: B

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Question 48

How many schedules does the Indian Constitution have?

- A 6
- B 12
- C 18
- D 24

Answer: B

Question 49

When is International Olympic Day observed?

- A 16th August
- B 2nd February

C 18th December

D 23rd June

Answer: D

Question 50

Author of famous book "12 Years A Slave" is

A Chetan Bhagat

B Nelson Mandela

C Solomon Northup Pirates

D Morarji Desai

Answer: C

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English

Instructions

For the following questions answer them individually

Question 51

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'.

My twin (A)/is five minutes younger(B)/than myself.(C)/No error(D)

A A

B B

C C

D D

Answer: C

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Question 52

Rearrange the parts of the sentence in correct order.

Tenzing Norgay created history

P-to conquer Mount Everest

Q-became the first man

R-on May 29, 1953, when he and Sir Edmund Hillary

A QRP

B QPR

C PRQ

D RQP

Answer: D

Question 53

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

- A Everything tastes nice to a hungry person
- B Getting a smaller share than expected
- C It is difficult to forget tasty food
- D Something easily achieved

Answer: D

Question 54

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase
Having or displaying an overly critical point of view.

- A Judgemental
- B To hallucinate
- C To contravene
- D Expanse

Answer: A

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Question 55

Improve the bracketed part of the sentence.

She (has fallen out with) the boy she was supposed to marry.

- A fell out with
- B has fallen out of
- C has fallen in with
- D no improvement

Answer: D

Question 56

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.
Obtain something by force, threats, or other unfair means.

- A To regret
- B To extort
- C To resent
- D To encompass

Answer: B

Question 57

Improve the bracketed part of the sentence.

If the screen (was any brighter), it would have been easier to read from the tablet.

- A was bright enough
- B was more brighter
- C had been brighter
- D no improvement

Answer: C

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Question 58

Select the word with the correct spelling.

- A infarnal
- B dorsally
- C somewhat
- D mangoose

Answer: B

Question 59

Rearrange the parts of the sentence in correct order.

All tyrants realize that,

P-victims, there is sure to be one who

Q-rises against them and strikes back!' R-one day, amongst their many

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

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.

The manager's bank account has been hacked.

- A They have hacked the manager's bank account.
- B Hacking has been done to the manager's bank account.
- C Bank's account hacking has been done of the manager.

D Someone has hacked the manager's bank account.

Answer: D

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Question 61

Select the word with the correct spelling.

A deceased

B choiciest

C anglecan

D thankfull

Answer: A

Question 62

Select the synonym of nutritious

A insubstantial

B exceptional

C nourishing

D superlative

Answer: C

Question 63

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

A picture paints a thousand words

A An image of a subject conveys its meaning or essence more effectively than a description does

B It is impossible to describe a beautiful sight

C A painter can express his feelings better than a writer

D A beautiful poem creates a mental picture

Answer: A

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Question 64

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 government allocated Rs 1,000 Cr forof historical monuments.

A resurrection

B revival

C resumption

D restoration

Answer: D

Question 65

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

He says that (A)/he has done engineering(B)/besides an MBA./(C)No error/(D)

A A

B B

C C

D D

Answer: D

Question 66

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.

Put your own houseorder before preaching others.

A within

B into

C in

D to

Answer: C

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Question 67

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.

Vinod said to me, "Has your brother returned from Dubai?"

A Vinod said to me if my brother has returned from Dubai.

B Vinod asked me if my brother had returned from Dubai.

C Vinod enquire to me if my brother had returned from Dubai.

D Vinod asks me whether my brother had returned from Dubai.

Answer: B

Question 68

Select the antonym of pejorative

A rude

- B complimentary
- C derisive
- D cheeky

Answer: B

Question 69

Select the synonym of transient

- A lacerate
- B ephemeral
- C perpetual
- D enduring

Answer: B

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Question 70

Select the antonym of avid

- A apathetic
- B desirous
- C devoted
- D fanatical

Answer: A

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.

The preacher challenged hundreds of thousands of young people who gathered in a(1)..... Polish meadow to reject being a ".....(2)....." who retreats into video games and computer screens and instead engage in social activism and politics to create a more just world.(3).....his speech with(4)....., the 79- year-old pope, despite a long day of public appearances, addressed his eager audience with enthusiasm yesterday on a warm summer night. Pope Francis spoke of a(5).....that comes from merely seeking convenience, from confusing happiness with a complacent way of life that could end up depriving people of the ability to determine their own fates.

Question 71

(1)

- A huge
- B sprawling
- C very big
- D gigantic

Answer: B

Question 72

(2)

- A couch potato
- B lazy tomato
- C loafer
- D spectator

Answer: A

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Question 73

(3)

- A Showering
- B Endowing
- C Glorifying
- D Peppering

Answer: D

Question 74

(4)

- A contemporary lingo
- B modern linguistics
- C fashionable jargon
- D common slang

Answer: A

Question 75

(5)

- A selfishness
- B panic
- C paralysis
- D calamity

Answer: C

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Mathematics

Instructions

For the following questions answer them individually

Question 76

If $4x^2 = 15^2 - 9^2$, then value of x is

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

Answer: B

Explanation:

Expression : $4x^2 = 15^2 - 9^2$

$$\Rightarrow 4x^2 = (15 - 9)(15 + 9)$$

$$\Rightarrow 4x^2 = (6)(24)$$

$$\Rightarrow x^2 = \frac{6 \times 24}{4} = 36$$

$$\Rightarrow x = \sqrt{36} = 6$$

\Rightarrow Ans - (B)

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Question 77

If $2x - 5y = 5$ and $2x - y = 9$, then $x - y$ is

- A 2
- B 4
- C 6
- D 3

Answer: B

Explanation:

Equation 1 : $2x - 5y = 5$

Equation 2 : $2x - y = 9$

Subtracting equation (i) from (ii), we get :

$$\Rightarrow 5y - y = 9 - 5$$

$$\Rightarrow 4y = 4 \Rightarrow y = 1$$

Substituting above value in equation(ii), $\Rightarrow 2x - 1 = 9$

$$\Rightarrow 2x = 9 + 1 = 10$$

$$\Rightarrow x = \frac{10}{2} = 5$$

$$\therefore (x - y) = 5 - 1 = 4$$

\Rightarrow Ans - (B)

Question 78

What is the value of cosec $-\frac{7\pi}{6}$?

- A -2
- B 2
- C $2/\sqrt{3}$
- D $-2/\sqrt{3}$

Answer: B

Explanation:

Expression : cosec $-\frac{7\pi}{6}$

$$\begin{aligned} \because \operatorname{cosec}(-x) &= -\operatorname{cosec}(x) \\ \Rightarrow \operatorname{cosec}\left(-\frac{7\pi}{6}\right) &= -\operatorname{cosec}\left(\frac{7\pi}{6}\right) \\ &= -\operatorname{cosec}\left(\pi + \frac{\pi}{6}\right) \\ &= -[-\operatorname{cosec}\left(\frac{\pi}{6}\right)] = \operatorname{cosec}\left(\frac{\pi}{6}\right) \\ &= 2 \end{aligned}$$

\Rightarrow Ans - (B)

Question 79

The diagonals do not form at least two congruent triangles in a

- A Parallelogram
- B Rhombus
- C Trapezium
- D Kite

Answer: C

Explanation:

In a parallelogram, rhombus or kite, both pairs of opposite sides are parallel, and thus there are at least two congruent triangles which is not the case in a trapezium which has only one pair of parallel sides.

\Rightarrow Ans - (C)

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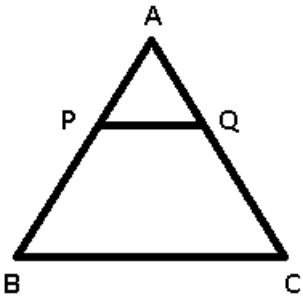
Question 80

Points P and Q lie on side AB and AC of triangle ABC respectively such that segment PQ is parallel to side BC. If the ratio of AP:PB is 1:4 and area of Δ APQ is 4 sq cm, what is the area of trapezium PQCB?

- A 60 sq cm
- B 16 sq cm
- C 96 sq cm
- D 21 sq cm

Answer: C

Explanation:



It is given that $AP : PB = 1 : 4$

Let $AP = 1$ cm and $PB = 4$ cm

Let area of trapezium $PQCB = x$ sq cm

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 $= (AP)^2 : (AB)^2$

$$= \frac{(1)^2}{(1+4)^2} = \frac{1}{(4+x)^2}$$

$$\Rightarrow \frac{1}{4+x} = \frac{1}{25}$$

$$\Rightarrow 4 + x = 25 \times 4 = 100$$

$$\Rightarrow x = 100 - 4 = 96 \text{ cm}^2$$

\Rightarrow Ans - (C)

Question 81

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

A -14

B 3

C 4

D 14

Answer: A

Explanation:

Expression 1 : $2x - 4 \leq 2 - x/3$

$$\Rightarrow 2x + \frac{x}{3} \leq 2 + 4$$

$$\Rightarrow \frac{7x}{3} \leq 6$$

$$\Rightarrow x \leq \frac{18}{7} \text{ -----(i)}$$

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

$$\Rightarrow 4x + 10 > 3x - 5$$

$$\Rightarrow 4x - 3x > -5 - 10$$

$$\Rightarrow x > -15 \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $-15 < x \leq \frac{18}{7}$

The only value that x can take among the options = -14

=> Ans - (A)

Question 82

A painter can paint a fence in 24 hours. After 6 hours he takes a break. What fraction of the fence is yet to be painted?

- A 0.6
- B 0.2
- C 0.75
- D 0.8

Answer: C

Explanation:

Time taken to paint a fence = 24 hours

Time spent = 6 hours

=> Fraction of the fence yet to be painted = $\frac{(24-6)}{24} = \frac{18}{24}$

$= \frac{3}{4} = 0.75$

=> Ans - (C)

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Question 83

If $\frac{1}{6}$ of $x - \frac{7}{2}$ of $\frac{3}{7}$ equals $-\frac{7}{4}$, then the value of x is

- A -1.5
- B 3
- C -2.5
- D 6

Answer: A

Explanation:

According to ques,

=> $\left(\frac{1}{6} \times x\right) - \left(\frac{7}{2} \times \frac{3}{7}\right) = \frac{-7}{4}$

=> $\frac{x}{6} - \frac{3}{2} = \frac{-7}{4}$

=> $\frac{x}{6} = \frac{3}{2} - \frac{7}{4}$

=> $\frac{x}{6} = \frac{-1}{4}$

=> $x = \frac{-6}{4} = -1.5$

=> Ans - (A)

Question 84

x and y are two numbers such that their mean proportion is 9 and third proportion is 243. What is the value of x and y ?

- A 3 and 9
- B 3 and 27
- C 6 and 27
- D 6 and 81

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 $y = 9$

$$\Rightarrow xy = (9)^2 = 81 \text{ -----(i)}$$

Third proportion = 243

$$\Rightarrow y^2 = x \times 243 \text{ -----(ii)}$$

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

$$\Rightarrow y^2 = \frac{81}{y} \times 243$$

$$\Rightarrow y^3 = (3)^4 \times (3)^5 = (3)^9$$

$$\Rightarrow y = (3)^{\frac{9}{3}} = 3^3 = 27$$

$$\text{Substituting it in equation(i), } \Rightarrow x = \frac{81}{27} = 3$$

\Rightarrow Ans - (B)

Question 85

If 21% of an electricity bill is discounted, Rs 1817 is still to be paid. How much was the original bill amount?

- A Rs 1502
- B Rs 2336
- C Rs 2300
- D Rs 1538

Answer: C

Explanation:

Let the original bill amount = Rs.100x

$$\text{If 21\% of an electricity bill is deducted, bill left} = \frac{100-21}{100} \times 100x = 79x$$

According to ques, $\Rightarrow 79x = 1817$

$$\Rightarrow x = \frac{1817}{79} = 23$$

\therefore Original bill amount = $100 \times 23 = \text{Rs.2300}$

\Rightarrow Ans - (C)

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Question 86

The average revenues of 7 consecutive years of a company is Rs 79 lakhs. If the average of first 4 years is Rs 74 lakhs and that of last 4 years is Rs 86 lakhs, what is the revenue for the 4th year?

- A Rs 87 lakhs
- B Rs 89 lakhs
- C Rs 85 lakhs
- D Rs 83 lakhs

Answer: A

Explanation:

Total revenues of 7 years of the company = $79 \times 7 = \text{Rs. } 553$ lakhs

Total revenue of first 4 years = $74 \times 4 = \text{Rs. } 296$ lakhs

Total revenue of last 4 years = $86 \times 4 = \text{Rs. } 344$ lakhs

\therefore Revenue of 4th year = $(296 + 344) - 553 = 640 - 553$

= Rs. 87 lakhs

=> Ans - (A)

Question 87

A shopkeeper, sold dried apricots at the rate Rs 1210 a kg and bears a loss of 12%. Now if he decides to sell it at Rs 1331 per kg, what will be the result?

- A 6.4 percent loss
- B 3.2 percent gain
- C 6.4 percent gain
- D 3.2 percent loss

Answer: D

Explanation:

Let cost price of 1 kg of apricots = $\text{Rs. } x$

If Selling price of 1 kg of apricots = Rs. 1210

$$\Rightarrow \text{Loss \%} = \frac{x-1210}{x} \times 100 = 12$$

$$\Rightarrow \frac{x-1210}{x} = \frac{12}{100} = \frac{3}{25}$$

$$\Rightarrow 25x - 30250 = 3x$$

$$\Rightarrow 25x - 3x = 22x = 30250$$

$$\Rightarrow x = \frac{30250}{22} = 1375$$

When selling price = Rs. 1331

$$\Rightarrow \text{Loss \%} = \frac{1375-1331}{1375} \times 100$$

$$= \frac{44 \times 4}{55} = 3.2\%$$

=> Ans - (D)

Question 88

If the shopkeeper sells an item at Rs 1600 which is marked as Rs 2000, then what is the discount he is offering?

- A 25 percent
- B 20 percent

C 30 percent

D 10 percent

Answer: B

Explanation:

Marked Price = Rs. 2000

Selling price = Rs. 1600

$$\Rightarrow \text{Discount \%} = \frac{(2000-1600)}{2000} \times 100 = \frac{400}{2000} \times 100 = 20\%$$

\Rightarrow Ans - (B)

SSC CGL Previous Papers (DOWNLOAD PDF)

Question 89

If $\operatorname{cosec}A + \cot A = x$, then value of x is

A $1/(\operatorname{cosec}A - \cot A)$

B $1/(\sec A - \tan A)$

C $1/(\sec A - \cos A)$

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

Answer: A

Explanation:

Expression : $\operatorname{cosec}A + \cot A = x$

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

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

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

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

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

Dividing both numerator and denominator by $(\sin A)$

$$= \frac{1}{\operatorname{cosec}A - \cot A}$$

\Rightarrow Ans - (A)

Question 90

Daljit lent Rs 10800 to Jaibir for 3 years and Rs 7500 to Kabir for 2 years on simple interest at the same rate of interest and received Rs 1422 in all from both of them as interest. The rate of interest per annum is

A 3.5 percent

B 4 percent

C 3 percent

D 4.5 percent

Answer: C

Explanation:

Let rate of interest per annum = $r\%$

Sum lent to Jaabir = Rs. 10,800 for 3 years and Rs. 7500 to Kabir for 2 years

$$\text{Simple interest} = \frac{P \times R \times T}{100}$$

$$\Rightarrow \text{Total interest} = \left(\frac{10800 \times r \times 3}{100} \right) + \left(\frac{7500 \times r \times 2}{100} \right) = 1422$$

$$\Rightarrow 324r + 150r = 1422$$

$$\Rightarrow 474r = 1422$$

$$\Rightarrow r = \frac{1422}{474} = 3\%$$

\Rightarrow Ans - (C)

Question 91

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

- A $\tan A / (1 + \sec A)$
- B $1 / (\operatorname{cosec} A + \cot A)$
- C $\tan A / (1 + \operatorname{cosec} A)$
- D $1 / (\sec A + \cot A)$

Answer: A

Explanation:

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

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

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

Replacing 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 : $\tan\left(\frac{A}{2}\right)$

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

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

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

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

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

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

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

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

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

=> Ans - (A)

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Question 92

In ΔPQR , S and T are points on side PQ and PR respectively. ST is parallel to QR. If lengths of PS, SQ and PR are 6 cm, 9 cm and 12.5 cm respectively, what is the length of TR?

A 7.5 cm

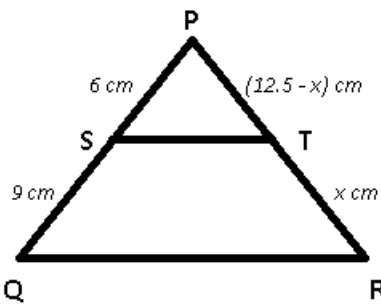
B 5 cm

C 10 cm

D 2.5 cm

Answer: A

Explanation:



ST is parallel to QR and PS = 6 cm and SQ = 9 cm

PR = 12.5 cm

Let TR = x cm

$$\Rightarrow \frac{PS}{SQ} = \frac{PT}{TR}$$

$$\Rightarrow 9 = \frac{6(12.5 - x)}{x}$$

$$\Rightarrow \frac{(12.5 - x)}{x} = \frac{2}{3}$$

$$\Rightarrow 37.5 - 3x = 2x$$

$$\Rightarrow 3x + 2x = 5x = 37.5$$

$$\Rightarrow x = \frac{37.5}{5} = 7.5 \text{ cm}$$

=> Ans - (A)

Question 93

How many balls of radius 2 cm can be made by melting a bigger ball of diameter 16 cm? (Take $\pi = 22/7$)

A 64

B 128

C 32

D 96

Answer: A

Explanation:

Since the larger ball is melted, the volume will remain constant.

Radius of big ball = 8 cm and radius of small balls = 2 cm

Let n balls be formed

$$\Rightarrow \frac{4}{3} \times \pi \times 2^3 \times n = \frac{4}{3} \times \pi \times 8^3$$

$$\Rightarrow n = \frac{8^3}{2^3} = \left(\frac{8}{2}\right)^3$$

$$\Rightarrow n = 4^3 = 64$$

\Rightarrow Ans - (A)

Question 94

At what point does the line $3x + y = -6$ intercept the x-axis?

A (2,0)

B (-2,0)

C (0,-6)

D (0,6)

Answer: B

Explanation:

The line $3x + y = -6$ will intercept the x-axis at $y = 0$

Thus, substituting value of y in above equation

$$\Rightarrow 3x + 0 = -6$$

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

Thus, the line will intercept x axis at (-2,0)

\Rightarrow Ans - (B)

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Question 95

A thief is stopped by a policeman from a distance of 150 metres. When the policeman starts the chase, the thief also starts running. Assuming the speed of the thief as 7 km/hr and that of policeman as 9 km/hr, how far the thief would have run, before he is overtaken by the policeman?

A 420 metres

B 630 metres

C 315 metres

D 525 metres

Answer: D

Explanation:

Since the thief is escaping from the police man, thus they both are running in same direction.

Speed of thief = 7 km/hr and speed of policeman = 9 km/hr

=> Relative speed = 9 - 7 = 2 km/hr

Distance between them = 150 metres = 0.15 km

=> Time taken = $\frac{\text{distance}}{\text{speed}}$

$$= \frac{0.15}{2} = \frac{3}{40} \text{ hr}$$

∴ Distance covered by thief before he was caught = $7 \times \frac{3}{40}$

= 0.525 km = 525 metres

=> Ans - (D)

Question 96

Common factor of $24b^6c^8d^2$, $18a^6c^2d^4$, $12a^4b^4$ is

A $72a^2b^2c^2d^2$

B $72a^6b^6c^8d^4$

C $6a^2b^2$

D 6

Answer: D

Explanation:

Factors of :

$$24b^6c^8d^2 = (2 \times 2 \times 6) \times b^6 \times c^8 \times d^2$$

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

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

The common factor in the 3 terms = 6

=> Ans - (D)

Question 97

Refer the below data table and answer the following Question.

	Quantity of Stock	Average Cost (Rs)
Mobile Phones	44	12000
Cameras	75	14000
TVs	55	56000
Refrigerators	29	53000
ACs	77	26000

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

A 81.97

B 819.7

C 161

D 280

Answer: A

Explanation:

Total cost of mobiles = $44 \times 12000 = \text{Rs. } 5,28,000$

Total cost of Cameras = $75 \times 14000 = \text{Rs. } 10,50,000$

Total cost of TVs = $55 \times 56000 = \text{Rs. } 30,80,000$

Total cost of Refrigerator = $29 \times 53000 = \text{Rs. } 15,37,000$

Total cost of AC = $77 \times 26000 = \text{Rs. } 20,02,000$

\therefore Total cost = $5,28,000 + 10,50,000 + 30,80,000 + 15,37,000 + 20,02,000 = \text{Rs. } 81,97,000$

Total cost in lakhs = Rs 81.97 lakhs

=> Ans - (A)

SSC CHSL Study Material

Question 98

Refer the below data table and answer the following Question.

Year	Ratio : Import / Export
2011	1
2012	1.1
2013	1.5
2014	0.9
2015	1.1

If the imports in 2012 was Rs. 1000 crores and the total exports in the years 2012 and 2013 together was Rs 4800 crores, then the imports in 2013 was?

A 3891

B 5836

C 909

D 2594

Answer: B

Explanation:

Imports in 2012 = Rs. 1000 crores

Let Exports in 2012 = Rs. y crores

Ratio of imports and exports in 2012 = 1.1

$$\Rightarrow \frac{1000}{y} = 1.1$$

$$\Rightarrow y = \frac{1000}{1.1} = 909.09$$

Total exports in the years 2012 and 2013 together = Rs. 4800 crores

=> Exports in 2013 = Rs. $(4800 - 909.09)$ crores = Rs. 3890.91 crores

Let imports in 2013 = Rs. x crores

Ratio of imports and exports in 2013 = $\frac{x}{3890.91} = 1.5$

$$\Rightarrow x = 3890.91 \times 1.5 = 5836.365 \approx 5836$$

\therefore Imports in 2013 was Rs. 5836 crores

=> Ans - (B)

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	110
7	120
8	130
9	140
10	145
11	150
12	160
13	165
14	170
15	175
16	180

What was the increase in the height of the child from the 10th Birthday to the 11th Birthday?

- A 15 cm
- B 10 cm
- C 5 cm
- D 4 cm

Answer: C

Explanation:

Height on 10th birthday = 145 cm

Height on 11th birthday = 150 cm

Increase in height = $150 - 145 = 5$ cm

=> Ans - (C)

Question 100

Between 10pm to 6am, a fitness band records the following data. Refer the below data table and answer the following Question.

Deep Sleep	15
Dreaming	15
Light Sleep	5
Extremely Light Sleep	30
Awake	35

How long was the user in Deep Sleep or was Awake?

- A 3.5 hours
- B 2.5 hours
- C 4.5 hours
- D 4 hours

Answer: D

Explanation:

Total time between 10 pm to 6 am = 8 hours

% time spent in deep sleep and in awake = 15 + 35 = 50%

=> Time spent on dreaming or extremely sleeping = $\frac{50}{100} \times 8$

= $\frac{8}{2} = 4$ hours

=> Ans - (D)

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