

SSC CHSL 22 Jan 2017 Morning Shift

English

Instructions

For the following questions answer them individually

Question 1

Improve the bracketed part of the sentence.

Let us hurry, or else the bus (will be leaving) the stop by the time we reach there.

- A will leave
- B will have left
- C would have left
- D no improvement

Answer: B

Question 2

Improve the bracketed part of the sentence.

I won't be able to leave for office until they (arrive).

- A have arrived
- B had arrived
- C will have arrived
- D no improvement

Answer: A

Question 3

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.

"O, what a beautiful lake that is!" said she.

- A She exclaimed joyfully that that was a very beautiful lake.
- B She exclaimed joyfully it was a very beautiful lake.

- C She exclaimed joyfully that was a very beautiful lake.
- D She exclaimed joyfully that it was a very beautiful lake.

Answer: A

Question 4

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

X marks the spot

- A A very popular place
- B Not to tell others of a fantastic discovery
- C The exact location
- D A secret hideout

Answer: C

Question 5

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

to use for the first time

- A paten
- B smitten
- C begotten
- D christen

Answer: D

Question 6

Select the synonym of synchronicity

- A conformity
- B conflict

C vendetta

D altercation

Answer: A

Question 7

Rearrange the parts of the sentence in correct order.

The atmosphere

P-is against them, but there appears

Q-in their administrations

R-to be fight left

A QPR

B RPQ

C PRQ

D PQR

Answer: C

Question 8

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 weather disrupted the final match.

A The final match has been disrupted by the weather.

B The final match had been disrupted by the weather.

C The final match was disrupted by the weather.

D The final match was being disrupted by the weather.

Answer: C

Question 9

Select the word with the correct spelling.

A fibrossis

- B quarries
- C arobics
- D homilies

Answer: D

Question 10

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

to expel large quantities of (something) rapidly and forcibly

- A to irrupt
- B to puke
- C to spew
- D to spritz

Answer: C

Question 11

Select the synonym of accolade

- A bungle
- B performance
- C fiasco
- D distinction

Answer: D

Question 12

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'.

One of the state(A)/in which there was a severe drought(B)/last year is Maharashtra.(C)/No error(D)

- A A
- B B

C C

D D

Answer: A

Question 13

Select the word with the correct spelling.

A leukeamia

B steeplees

C feminism

D mendril

Answer: C

Question 14

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 stock was(A)/divided among(B)/the two brothers.(C)No error(D)

A A

B B

C C

D D

Answer: B

Question 15

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. Please be patient. All your grievances will be _____.

A settled

B satisfied

C solved

D attended

Answer: A

Question 16

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 _____ my black leather shoes till they shine.

A scrub

B rub

C brush

D polish

Answer: D

Question 17

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

You can say that again

A To challenge someone

B To express agreement

C To politely ask someone to repeat

D A favourite story

Answer: B

Question 18

Select the antonym of astringe

A liberate

B constringe

C circumscribe

D tauten

Answer: A

Question 19

Rearrange the parts of the sentence in correct order.

The idea was

P-to spend as little money

Q-while avoiding loss of lives

R-as possible

A RPQ

B QPR

C QRP

D PQR

Answer: D

Question 20

Select the antonym of abdicate

A forgo

B usurp

C waive

D cede

Answer: B

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.

We now have a peculiar combination _____ the economic policy of India: a declared attempt at fiscal consolidation, combined with a _____ to do what it takes to raise tax revenues. This unfortunate _____ has meant a squeeze _____ Central government expenditures, and particularly those relating to social spending that directly _____ most people in the country.

Question 21

We now have a peculiar combination _____ the economic policy of India

A into

B in

C of

D about

Answer: B

Question 22

combined with a _____ to do what it takes to raise tax revenues.

A doubt

B objection

C questioning

D reluctance

Answer: D

Question 23

This unfortunate _____ has meant a squeeze

A juxtaposition

B nearness

C contact

D proximity

Answer: A

Question 24

_____ Central government expenditures

A onto

B on

C upon

D for

Answer: B

Question 25

social spending that directly _____ most people in the country.

A effects

B affected

C affects

D affect

Answer: C

Reasoning

Instructions

For the following questions answer them individually

Question 26

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

Doctor : Patient : : Shopkeeper : ?

A Products

B Customer

C Retailer

D Games

Answer: B

Explanation:

Professional relationship between two parties is given. Doctor deals with patients, similarly a shopkeeper deals with customers.

=> Ans - (B)

Question 27

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

EF : GH :: IJ : ?

A MN

B LK

C KL

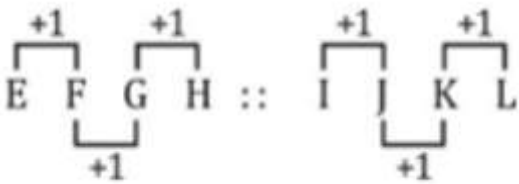
D GH

Answer: C

Explanation:

Expression = EF : GH :: IJ : ?

The pattern followed is :



Thus, IJ : KL

=> Ans - (C)

Question 28

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

AE : FJ :: ? : PT

A OK

B KO

C DE

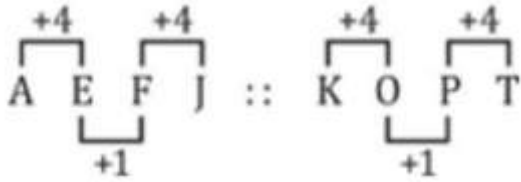
D FG

Answer: B

Explanation:

Expression = AE : FJ :: ? : PT

The pattern followed is :



Thus, **KO** : PT

=> Ans - (B)

Question 29

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

96 : 54 :: 89 : ?

A 76

B 72

C 67

D 64

Answer: B

Explanation:

Expression = 96 : 54 :: 89 : ?

The second number is the product of digits of first number.

Eg :- $9 \times 6 = 54$

Similarly, $8 \times 9 = 72$

=> Ans - (B)

Question 30

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

A Magenta

B Maroon

C Turquoise

D Picasa

Answer: D

Explanation:

Except Picasa, other three are colors, hence it is the odd one out.

=> Ans - (D)

Question 31

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

A AI

B OU

C AD

D IO

Answer: C

Explanation:

Except AD other three are pair of vowels, hence it is the odd one out.

=> Ans - (C)

Question 32

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

A 3

B 2

C 5

D 1

Answer: D

Explanation:

Except 1 other three are prime numbers, hence it is the odd one out.

=> Ans - (D)

Question 33

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

A 525

B 745

C 636

D 416

Answer: B

Explanation:

The last two digits is the square of the first digit.

$$6^2 = 36, 5^2 = 25, 4^2 = 16$$

$$\text{But } 7^2 = 49 \neq 45$$

=> Ans - (B)

Question 34

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

Nitrogen fixation, Ammonification, Nitrification, ?

A Denitrification

B Nitrate

C Decomposer

D Fossil Fuel

Answer: A

Explanation:

Steps in Nitrogen cycle are given.

= Nitrogen fixation -> Ammonification -> Nitrification -> Denitrification

=> Ans - (A)

Question 35

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

CEA, GIE, KMI, ?

A NOP

B OPM

C OQM

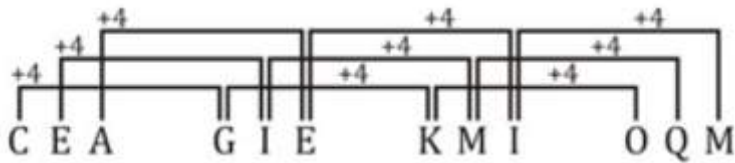
D LMN

Answer: C

Explanation:

Expression : CEA, GIE, KMI, ?

The pattern followed is that :



Thus, missing term = **OQM**

=> Ans - (C)

Question 36

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

CD, XW, GH, TS, KL, ?

A QP

B PO

C OP

D PQ

Answer: B

Explanation:

Expression : CD, XW, GH, TS, KL, ?

Odd terms : Consecutive pairs of English alphabets are written after a gap of two letters.

Eg :- CD (+3 letters) = GH (+3 letters) = KL

Similarly for even terms, pairs are written in inverse order.

= XW (-3 letters) = TS (-3 letters) = **PO**

=> Ans - (B)

Question 37

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

9, 26, 60, 111, ?

A 128

B 179

C 162

D 145

Answer: B

Explanation:

Multiples of 17 are added.

$$9 + 17 = 26$$

$$26 + 34 = 60$$

$$60 + 51 = 111$$

$$111 + 68 = \mathbf{179}$$

=> Ans - (B)

Question 38

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) All dogs are rats.

(II) Some rats are lizards.

Conclusion:

(I) Some dogs are lizards.

(II) Some lizards are dogs.

A Conclusion I follows

B Conclusion II follows

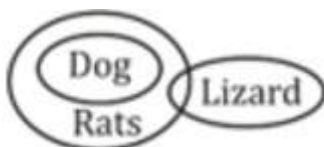
C Neither I nor II follows

D Both I and II follows

Answer: C

Explanation:

The venn diagram for above statements is :



Conclusion:

(I) Some dogs are lizards = false

(II) Some lizards are dogs = false

Thus, neither I nor II follows

=> Ans - (C)

Question 39

In a family, Virendra's weight is more than Parminder's weight. Parminder's weight is less than Kuldeep's weight but more than Gurjeet's weight. The sum of Kuldeep's weight and Tommy's weight is equal to the weight of Virendra. Who is the heaviest in the family?

- A Virendra
- B Kuldeep
- C Gurjeet
- D Parminder

Answer: A

Explanation:

Let weights of Virendra, Parminder, Kuldeep, Gurjeet and Tommy be respectively represented as V, P, K, G, T

Virendra's weight is more than Parminder's weight, $\Rightarrow V > P$

Parminder's weight is less than Kuldeep's weight but more than Gurjeet's weight, $\Rightarrow K > P > G$

The sum of Kuldeep's weight and Tommy's weight is equal to the weight of Virendra, $\Rightarrow K + T = V$

\Rightarrow Virendra's weight is more than Kuldeep and Tony's weight individually.

Thus, combining above statements, we get : $V > K > P > G$

\therefore Virendra is the heaviest in the family.

=> Ans - (A)

Question 40

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

- i. Gesture
- ii. Germination
- iii. Geriatric
- iv. Genetic

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

Answer: B

Explanation:

As per the order of dictionary :

= Genetic -> Geriatric -> Germination -> Gesture

≡ iv, iii, ii, i

=> Ans - (B)

Question 41

In a certain code language "CANADA" is written as "BZMBEB". How is "SYDNEY" written in that code language?

A RXOCFZ

B OFZRXC

C RXCOFZ

D ZFOCXR

Answer: C

Explanation:

"CANADA" is written as "BZMBEB"

The pattern followed is :

C	A	N	A	D	A
↑+1	↑+1	↑+1	↓+1	↓+1	↓+1
B	Z	M	B	E	B

Similarly, for SYDNEY :

S	Y	D	N	E	Y
↑+1	↑+1	↑+1	↓+1	↓+1	↓+1
R	X	C	O	F	Z

=> Ans - (C)

Question 42

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

13	F	14
6	?	3
7	H	9

A P

B L

C Q

D R

Answer: B

Explanation:

The pattern followed is that the alphabets are numbered alphabetically, A=1, B=2, C=3 and so on and the sum of each column is same.

$$\text{Eg :- } 13 + 6 + 7 = 26$$

$$\text{and } 14 + 3 + 9 = 26$$

$$\text{Similarly, F=6 and H=8, } \Rightarrow 6 + 8 + x = 26$$

$$\Rightarrow x = 26 - 14 = 12 \equiv L$$

\Rightarrow Ans - (B)

Question 43

If "S" denotes "multiplied by", "V" denotes "subtracted from", "M" denotes "added to" and "L" denotes "divided by", then

$$10 \text{ V } 12 \text{ M } 42 \text{ L } 6 \text{ S } 4 = ?$$

A 26

B 24

C 20

D 28

Answer: A

Explanation:

$$\text{Expression : } 10 \text{ V } 12 \text{ M } 42 \text{ L } 6 \text{ S } 4 = ?$$

$$\equiv 10 - 12 + 42 \div 6 \times 4$$

$$= -2 + (7 \times 4)$$

$$= -2 + 28 = 26$$

\Rightarrow Ans - (A)

Question 44

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

p_r_s_q_p_rs

A qrspq

B qsrpq

C qsrqq

D qsprq

Answer: B

Explanation:

The pattern followed is that in groups of 4, the term 'pqrs' is alternatively repeated in this and reverse order.

= pqrs srqp pqrs

=> Ans - (B)

Question 45

Rohan, after walking 5 km towards west, turns left and then walks for 12 km more. Find the shortest distance between his initial and final position.

A 13 km

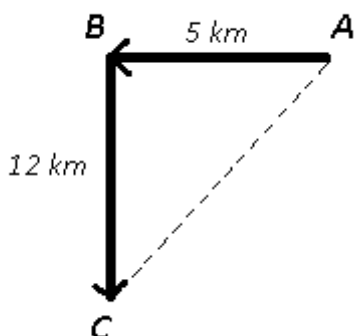
B 7 km

C 6 km

D 17 km

Answer: A

Explanation:



Let Rohan start from point A walked 5 km towards west to reach point B, then he turns left and then walks for 12 km towards south to reach C.

$$\text{Thus, } (AC)^2 = (AB)^2 + (BC)^2$$

$$\Rightarrow (AC)^2 = (5)^2 + (12)^2$$

$$\Rightarrow (AC)^2 = 25 + 144 = 169$$

$$\Rightarrow AC = \sqrt{169} = 13 \text{ km}$$

\Rightarrow Ans - (A)

Question 46

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, '5' can be represented by 42, 43, etc., and 'J' can be represented by 78, 79, etc. Similarly, you have to identify the set for the word 'TERM'.

Matrix - I

	0	1	2	3	4
0	A	R	U	T	P
1	A	R	T	P	P
2	O	T	R	O	A
3	T	N	N	R	A
4	U	Q	S	S	S

Matrix -II

	5	6	7	8	9
5	V	E	V	M	K
6	H	E	M	I	K
7	H	M	E	J	J
8	M	F	D	E	L
9	V	H	C	E	L

A 21, 77, 33, 76

B 12, 76, 22, 85

C 30, 66, 89, 76

D 31, 98, 33, 58

Answer: A

Explanation:

(A) : 21, 77, 33, 76 = **TERM**

(B) : 12, 76, 22, 85 = **TMRM**

(C) : 30, 66, 89, 76 = TELM

(D) : 31, 98, 33, 58 = NERM

=> Ans - (A)

Question 47

B is the brother of A, and A is the son of C. D is C's father. How is B related to D?

A Grandfather

B Brother

C Grandson

D Father

Answer: C

Explanation:

B is the brother of A, and A is the son of C, => B and A are sons of C.

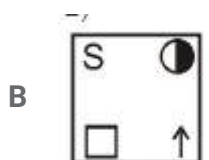
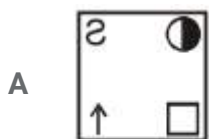
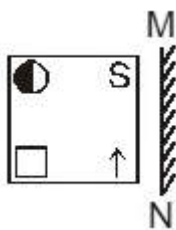
D is C's father.

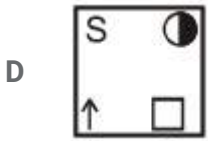
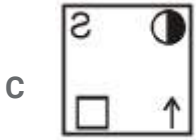
Thus, B is the grandson of D.

=> Ans - (C)

Question 48

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



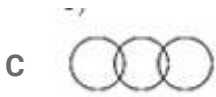
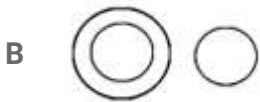


Answer: A

Question 49

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

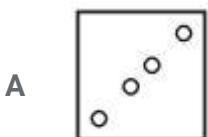
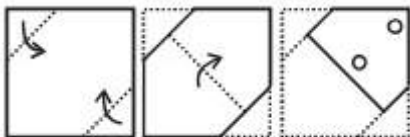
Electrons, Nucleus, Neutrons

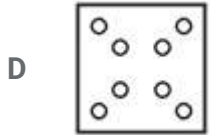
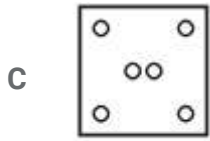
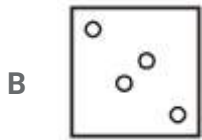


Answer: B

Question 50

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.





Answer: A

General Awareness

Instructions

For the following questions answer them individually

Question 51

Ajanta Caves in Maharashtra have rock-cut cave monuments of which religion?

- A Sikhism
- B Buddhism
- C Christianity
- D Hinduism

Answer: B

Question 52

Highest Civilian Honour received by Saina Nehwal is

- A Padma Shri
- B Padma Bhushan
- C Padma Vibhushan

D Bharat Ratna

Answer: B

Question 53

The yellow colour of human urine is due to

A Bile Salts

B Cholesterol

C Lymph

D Urochrome

Answer: D

Question 54

The wilting of plants takes place due to ____.

A Photosynthesis

B Transpiration

C Absorption

D Respiration

Answer: B

Question 55

Bovidae Ovis is the scientific name of ____.

A Goat

B Cow

C Buffalo

D Sheep

Answer: D

Question 56

Which glass is used to make spectacles?

- A Crook's glass
- B Potash glass
- C Jena glass
- D Soda glass

Answer: A

Question 57

Barium loses ____ electrons to achieve noble gas electron configuration.

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

Answer: B

Question 58

Who is known as the father of computing?

- A Charles Faraday
- B Michael Jonathan
- C Charles Babbage
- D Douglas Well

Answer: C

Question 59

Telugu is the official language of _____.

- A Andhra Pradesh

B Arunachal Pradesh

C Assam

D Bihar

Answer: A

Question 60

If demand curve for trekking boots is $D = 67500 - 18P$ and supply curve is $S = 22500 + 12P$, find the equilibrium Price?

A 1500

B 750

C 2250

D 500

Answer: A

Question 61

Full employment is the level at which there is _____.

A no frictional unemployment

B no cyclical unemployment

C no structural unemployment

D no unemployment

Answer: B

Question 62

Plants get their energy to produce food from which of the following?

A Photosynthesis

B Bacteria

C Fungi

D Sun

Answer: D

Question 63

Sundarbans Tiger Reserve is in which state?

- A** Orissa
- B** Andhra Pradesh
- C** Assam
- D** West Bengal

Answer: D

Question 64

Ad Valorem tax is levied on?

- A** Value
- B** Volume
- C** Production
- D** Export

Answer: A

Question 65

What is the approximate circumference of earth?

- A** 40,000 Km
- B** 60,000 Km
- C** 80,000 Km
- D** 1,00,000 Km

Answer: A

Question 66

In terms of size, Mars ranks no. ___ in our Solar System.

A 5

B 6

C 7

D 8

Answer: C

Question 67

Whose reign in Indian History is called the Golden Age of India?

A Mughal Empire

B Maratha Empire

C Gupta Empire

D Maurya Empire

Answer: C

Question 68

What were the names of Atom Bombs dropped on Japan?

A Little Boy & Fat Man

B Little Man & Fat Boy

C Little Girl & Fat Woman

D Little Woman & Fat Girl

Answer: A

Question 69

Who discovered Pluto?

A Jim Maxwell

B Tim Heynman

C Myne Ketteborough

D Clyde Tombaugh

Answer: D

Question 70

As per Newton's law of gravitation, the force between two bodies is _____.

A directly proportional to the product of their masses

B directly proportional to the distance between them

C directly proportional to the product of their radius

D directly proportional to the product of forces

Answer: A

Question 71

Sound can not travel in which of the following medium?

A Solid

B Liquid

C Gas

D Vacuum

Answer: D

Question 72

Who was the second woman to become the president of the Indian National Congress in 1925 and the first Indian woman to do so?

A Vijaylakshmi Pandit

B Sarojini Naidu

C Padmaja Naidu

D Fathima Bibi

Answer: B

Question 73

The number of parliamentary seats (Lok Sabha) of Gujarat is

- A 10
- B 26
- C 28
- D 48

Answer: B

Question 74

Geet Sethi is associated with which game?

- A Billiards
- B Cricket
- C Hockey
- D Chess

Answer: A

Question 75

Who is the author of "Two States"?

- A Chetan Bhagat
- B Rohit Sharma
- C Amish
- D Devdutta Patnaik

Answer: A

Instructions

For the following questions answer them individually

Question 76

What is the value of $\sin 330^\circ$?

A 2

B $2/\sqrt{3}$

C $\sqrt{2}$

D $-1/2$

Answer: D

Explanation:

Expression : $\sin 330^\circ$

$$= \sin(360 - 30)$$

$$= -\sin(30)$$

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

=> Ans - (D)

Question 77

If the amount received at the end of 2nd and 3rd year at Compound Interest on a certain Principal is Rs 22472, and Rs 23820.32 respectively, what is the rate of interest?

A 3 percent

B 6 percent

C 12 percent

D 10 percent

Answer: B

Explanation:

Compound interest at the end of 2nd year = Rs. 22,472

Compound interest at the end of 3rd year = Rs. 23,820.32

=> Difference = $23820.32 - 22472 = \text{Rs. } 1348.32$

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

$$\therefore \text{Rate of interest, } r = \frac{1348.32}{22472} \times 100 = 6\%$$

=> Ans - (B)

Question 78

Reflection of the point (2,-4) in the origin is

A (2,4)

B (-2,-4)

C (2,-4)

D (-2,4)

Answer: D

Explanation:

Reflection of point (a,b) in origin = (-a,-b)

=> Reflection of (2,-4) = (-2,4)

=> Ans - (D)

Question 79

The measures of the three angles of a triangle are in the ratio 3:4:5. What is the measure of the biggest angle?

A 75°

B 60°

C 45°

D 30°

Answer: A

Explanation:

Let the three angles of the triangle be $3x, 4x, 5x$

Sum of internal angles of a triangle = 180°

$$\Rightarrow 3x + 4x + 5x = 180^\circ$$

$$\Rightarrow 12x = 180^\circ$$

$$\Rightarrow x = \frac{180}{12} = 15^\circ$$

$$\therefore \text{Biggest angle} = 5x = 5 \times 15 = 75^\circ$$

=> Ans - (A)

Question 80

The third proportional of two numbers 24 and 36 is ?

- A 48
- B 54
- C 72
- D 108

Answer: B

Explanation:

Three numbers a,b,c are in proportion iff $b^2 = ac$

Here, a = 24 and b = 36

$$\Rightarrow (36)^2 = 24 \times c$$

$$\Rightarrow c = \frac{36 \times 36}{24} = 3 \times 18$$

$$\Rightarrow c = 54$$

\Rightarrow Ans - (B)

Question 81

A vendor buys apples at the rate of 21 for Rs 7 and sells at the rate of 5 for Rs 2. What will be the result?

- A 20 percent loss
- B 20 percent gain
- C 16.66 percent gain
- D 16.6 percent loss

Answer: B

Explanation:

The vendor buys 21 apples for Rs. 7

$$\Rightarrow \text{Cost price of 1 apple} = \frac{7}{21} = \text{Rs } 0.33$$

He sells 5 apples for Rs. 2

$$\Rightarrow \text{Selling price of 1 apple} = \frac{2}{5} = \text{Rs } 0.4$$

\therefore Selling price is more than Cost price, the vendor earns a profit

$$\Rightarrow \text{Profit \%} = \frac{(0.4-0.33)}{0.33} \times 100$$

$$= 0.67 \times 30 = 20\%$$

\Rightarrow Ans - (B)

Question 82

If $1/\sqrt{1 + \cot^2 A} = x$, then value of x is

A $\sin A$

B $\operatorname{cosec} A$

C $\cos A$

D $\sec A$

Answer: A

Explanation:

$$\text{Expression : } \frac{1}{\sqrt{1+\cot^2 A}}$$

$$\therefore (\operatorname{cosec}^2 A - \cot^2 A = 1)$$

$$= \frac{1}{\sqrt{\operatorname{cosec}^2 A}} = \frac{1}{\operatorname{cosec} A}$$

$$= \sin A$$

\Rightarrow Ans - (A)

Question 83

If $3x-5(x-1) > 2x - 1 < 2 + 4x$; then x can take which of the following values?

A -2

B 2

C 3

D -1

Answer: D

Explanation:

$$\text{Expression 1 : } 3x-5(x-1) > 2x - 1$$

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

$$\Rightarrow 2x + 2x < 5 + 1$$

$$\Rightarrow 4x < 6$$

$$\Rightarrow x < \frac{3}{2} \text{ -----(i)}$$

$$\text{Expression 2 : } 2x - 1 < 2 + 4x$$

$$\Rightarrow 4x - 2x > -1 - 2$$

$$\Rightarrow 2x > -3$$

$$\Rightarrow x > \frac{-3}{2} \text{ -----(ii)}$$

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

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

\Rightarrow Ans - (D)

Question 84

If $x - y = -8$ and $xy = 45$, then $(x^2 + y^2)$

A 154

B 64

C 90

D 26

Answer: A

Explanation:

Given : $(x - y) = -8$ and $xy = 45$

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

$$\Rightarrow (-8)^2 = (x^2 + y^2) - (2 \times 45)$$

$$\Rightarrow (x^2 + y^2) = 64 + 90 = 154$$

\Rightarrow Ans - (A)

Question 85

Area of _____ equals square of its side.

A Rhombus

B Cyclic quadrilateral

C Rectangle

D Square

Answer: D

Explanation:

Area of square is equal to square of its side.

=> Ans - (D)

Question 86

Mahmood can do a piece of work in 40 hours. If he is joined by Janaki who is 50% more efficient, in what time will they together finish the work?

- A 2 hours
- B 6 hours
- C 16 hours
- D 3 hours

Answer: C

Explanation:

Let total work to be done = 80 units

Mahmood's efficiency = $\frac{80}{40} = 2$ units/hr

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

=> Mahmood and Janaki 1 day's work = $2 + 3 = 5$ units/hr

∴ Time taken by them to finish the work together = $\frac{80}{5} = 16$ hours

=> Ans - (C)

Question 87

Product of digits of a 2-digit number is 24. If we add 45 to the number, the new number obtained is a number formed by interchange of the digits. What is the number?

- A 83
- B 64
- C 46
- D 38

Answer: D

Explanation:

Let the unit's digit of the number be y and ten's digit be x

=> Number = $10x + y$

$$\text{Product of digits} = x \times y = 24 \text{ -----(i)}$$

$$\text{According to question, } \Rightarrow 10x + y + 45 = 10y + x$$

$$\Rightarrow 9y - 9x = 45$$

$$\Rightarrow y - x = \frac{45}{9} = 5 \text{ -----(ii)}$$

Solving equation (i) and (ii), we get : $x = 3$ and $y = 8$

\therefore Number = 38

\Rightarrow Ans - (D)

Question 88

A solid right circular cone of radius 10 cm and height 8 cm is put inside a cylindrical vessel of radius 11 cm and height 9 cm. How much water in cubic cm will be required to fill the cylindrical vessel completely?

A 5168.96 cubic cms

B 2584.48 cubic cms

C 7753.44 cubic cms

D 1292.24 cubic cms

Answer: B

Explanation:

Radius of cylinder, $R = 11$ cm and height, $H = 9$ cm

Radius of cone, $r = 10$ cm and height, $h = 8$ cm

Water required to fill the cylinder completely = Volume of cylinder - Volume of cone

$$= (\pi R^2 H) - \left(\frac{1}{3} \pi r^2 h\right)$$

$$= (\pi) \left(R^2 H - \frac{1}{3} r^2 h\right)$$

$$= \left(\frac{22}{7}\right) \left[(11^2 \times 9) - \left(\frac{1}{3} \times 10^2 \times 8\right)\right]$$

$$= \left(\frac{22}{7}\right) \left(1089 - \frac{800}{3}\right)$$

$$= \frac{22}{7} \times \frac{2467}{3}$$

$$\approx 2584.48 \text{ cm}^3$$

\Rightarrow Ans - (B)

Question 89

If $\sin A / (1 + \cos A) = x$, then x is

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

B $\sec A - \cot A$

C $\sec A + \cot A$

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

Answer: D

Explanation:

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

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

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

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

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

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

=> Ans - (D)

Question 90

To cover a distance of 252 km in 2.5 hours what should be the average speed of the car in meters/second?

A 100.8 m/s

B 50.4 m/s

C 28 m/s

D 56 m/s

Answer: C

Explanation:

The car covers 252 km in 2.5 hours

$$\text{Speed of car (in km/h)} = \frac{252}{2.5} = 100.8 \text{ km/hr}$$

$$\Rightarrow \text{Speed of car (in m/s)} = 100.8 \times \frac{5}{18}$$

$$= 5.6 \times 5 = 28 \text{ m/s}$$

=> Ans - (C)

Question 91

In a class of 39 students there are 36 girls. The average weight of these girls is 38 Kg and average weight of the full class is 40 kgs. What is the average weight of the boys of the class?

A 42

B 64

C 20

D 62

Answer: B

Explanation:

Total number of students = 39 and number of girls = 36

=> Number of boys in class = $39 - 36 = 3$

Average weight of girls = 38 kg

=> Total weight of girls = $38 \times 36 = 1368$ kg

Similarly, total weight of full class = $40 \times 39 = 1560$ kg

=> Total weight of boys = $1560 - 1368 = 192$ kg

\therefore Average weight of boys = $\frac{192}{3} = 64$ kg

=> Ans - (B)

Question 92

Marked price of an item is Rs 300. On purchase of 2 items discount is 24%, on purchase of 5 items discount is 38%. Rachna buys 7 items, what is the effective discount?

A 17.5 percent

B 20.4 percent

C 34 percent

D 12.8 percent

Answer: C

Explanation:

Marked price of item = Rs. 300

=> Marked price of 2 items = $2 \times 300 =$ Rs. 600

Amount saved on buying 2 items = $\frac{24}{100} \times 600 =$ Rs.144

Marked price of 5 items = $5 \times 300 =$ Rs. 1500

Amount saved on buying 5 items = $\frac{38}{100} \times 1500 =$ Rs.570

Thus, on buying 7 items, total amount saved = $144 + 570 =$ Rs. 714

Total marked price of 7 items = $7 \times 300 =$ Rs. 2100

$$\therefore \text{Effective discount} = \frac{714}{2100} \times 100$$

$$= \frac{714}{21} = 34\%$$

=> Ans - (C)

Question 93

Factorise $24x^2 - 54x - 15$

A $3(2x + 5)(4x - 1)$

B $3(2x - 5)(4x + 1)$

C $2(3x - 5)(4x + 1)$

D $4(2x - 5)(3x + 1)$

Answer: B

Explanation:

Expression : $24x^2 - 54x - 15$

$$= 3(8x^2 - 18x - 5)$$

$$= 3(8x^2 + 2x - 20x - 5)$$

$$= 3[2x(4x + 1) - 5(4x + 1)]$$

$$= 3(2x - 5)(4x + 1)$$

=> Ans - (B)

Question 94

Two numbers are 40% and 50% lesser than a third number. By how much percent is the second number to be enhanced to make it equal to the first number?

A 16.67 percent

B 20 percent

C 10 percent

D 25 percent

Answer: B

Explanation:

Let third number = $100x$

First number is 40% less than $100x$ and second number is 50% less than $100x$

=> First number = $60x$ and Second number = $50x$

To make second number equal to first number, it should be enhanced by = $60x - 50x = 10x$

$$\Rightarrow \text{Required \%} = \frac{10x}{50x} \times 100 = 10 \times 2 = 20\%$$

\Rightarrow Ans - (B)

Question 95

The line passing through the point (5,a) and point (4,3) is perpendicular to the line $x - 6y = 8$. What is the value of 'a'?

A -3

B -2

C 4

D 5

Answer: A

Explanation:

Slope of line $x - 6y = 8$:

$$= \frac{-1}{-6} = \frac{1}{6}$$

Slope of line passing through the point (5,a) and point (4,3) = $\frac{3-a}{4-5} = (a - 3)$

Product of slopes of two perpendicular lines is -1

$$\Rightarrow (a - 3) \times \frac{1}{6} = -1$$

$$\Rightarrow a - 3 = -6$$

$$\Rightarrow a = -6 + 3 = -3$$

\Rightarrow Ans - (A)

Question 96

The sum of all prime numbers between 18 and 32 is:

A 99

B 100

C 102

D 97

Answer: C

Explanation:

Sum of all prime numbers between 18 and 32 :

$$= 19 + 23 + 29 + 31$$

$$= 102$$

=> Ans - (C)

Question 97

Refer the below data table and answer the following question

	Weight (kg)	Height (m)
Ashu	68	1.6
Aslam	62	1.75
Ayush	63	1.59
Ayushman	50	1.56

Who has the least weight to height ratio ?

- A Ashu
- B Aslam
- C Ayush
- D Ayushman

Answer: D

Explanation:

Ratio of weight to height

$$\text{Ashu : } \frac{68}{1.6} = 42.5$$

$$\text{Aslam : } \frac{62}{1.75} = 35.4$$

$$\text{Ayush : } \frac{63}{1.59} = 39.6$$

$$\text{Ayushman : } \frac{50}{1.56} = 32 \quad \text{[LEAST]}$$

=> Ans - (D)

Question 98

Refer the below data table and answer the following question

Year	Company's Profit
2011	25
2012	25
2013	15
2014	5
2015	15

What was the revenue of the company if its expenditure was Rs 650 crore in the year when its % profit was the least?

- A 682.5
- B 715
- C 747.5
- D 650

Answer: A

Explanation:

Profit % was least in 2014 = 5%

Let revenue = Rs. x crore and expenditure = Rs. 650 crore

$$\Rightarrow \text{Profit \%} = \frac{x-650}{650} \times 100 = 5$$

$$\Rightarrow \frac{x-650}{650} = \frac{5}{100} = \frac{1}{20}$$

$$\Rightarrow x - 650 = \frac{650}{20} = 32.5$$

$$\Rightarrow x = 650 + 32.5 = 682.5 \text{ crore}$$

\Rightarrow Ans - (A)

Question 99

The following table shows the number of children in each house of a society

Number of Children	Number of Houses
0	3
1	7
2	12
3	7

What is the average number of children per house ?

- A 2.04
- B 1.79

C 2.29

D 1.54

Answer: B

Explanation:

Total number of houses = $3 + 7 + 12 + 7 = 29$

Total children = $(0 \times 2) + (1 \times 7) + (2 \times 12) + (3 \times 7)$

= $7 + 24 + 21 = 52$

\therefore Average number of children per house = $\frac{52}{29} = 1.79$

=> Ans - (B)

Question 100

Refer the below data table and answer the following question

Partners	Present % share
Anand	10
Basu	30
Chinmay	20
Dhiraj	5
Ejaz	35

If the company has issued 6 lakh shares between its five partners and if Basu offers to sell 15,000 of his shares to Dhiraj, then Dhiraj will have how many shares?

A 30000 shares

B 60000 shares

C 15000 shares

D 45000 shares

Answer: D

Explanation:

Total shares = 6,00,000

Original shares with Dhiraj = $\frac{5}{100} \times 600000 = 30,000$

If Basu offers to sell 15,000 of his shares to Dhiraj,

=> Shares with Dhiraj = $30,000 + 15,000 = 45,000$

=> Ans - (D)

SSC CHSL 22 Jan 2017 Afternoon Shift

General Awareness

Instructions

For the following questions answer them individually

Question 1

The Group of Monuments at Hampi is an important centre?

- A Islam
- B Hindu
- C Sikh
- D Christian

Answer: B

Question 2

Name the first Indian to get Bharat Ratna posthumously.

- A Atal Bihari Vajpayee
- B Lal Bahadur Shastri
- C C K Naidu
- D Mihir Sen

Answer: B

Question 3

Which of the following is secreted by the liver?

- A Glucose
- B Iodine
- C Cortisol
- D Bile

Answer: D

Question 4

Ferns belong to which division of plants?

- A Gymnosperms
- B Angiosperms
- C Thallophyta
- D Pteridophyta

Answer: D

Question 5

Who invented Antibiotics?

- A Joseph Lister
- B William Harvey
- C Robert Knock
- D Alexander Fleming

Answer: D

Question 6

The Chemical formula of Methanol is

- A C₂H₅OH
- B CH₃(OH)₂
- C CH₃OH
- D CH₄OH

Answer: C

Question 7

Why do atoms bond?

- A To reduce potential energy and gain stability

- B** To make atoms
- C** To increase potential energy and lose stability
- D** To increase potential energy and gain stability

Answer: D

Question 8

A grammar for annotating a document in a way that is syntactically distinguishable from the text, such as HTML, is

- A** Command Language
- B** Machine Language
- C** Markup Language
- D** Style Sheet Language

Answer: C

Question 9

Gaur dance is a popular folk dance of

- A** Chhattisgarh
- B** Tripura
- C** Jharkhand
- D** Uttarakhand

Answer: A

Question 10

A hand made paper workshop can hire 8 craftsmen by paying them Rs 400 per person per day. The 9th craftsman demands Rs 450 per day. If this craftsman is hired then all other craftsmen must be paid Rs 450. The marginal resource (labour) cost of the 9th craftsman is

- A** Rs 50
- B** Rs 850
- C** Rs 800

D Rs 100

Answer: B

Question 11

Unemployment resulting from industrial reorganization, typically due to technological change, rather than fluctuations in supply or demand is called

A Structural unemployment

B Frictional unemployment

C Seasonal unemployment

D Cyclical unemployment

Answer: A

Question 12

Which of the following types of water is known to be absolutely free from any impurity?

A Mineral Water

B Distilled Water

C Spring Water

D Boiled Water

Answer: B

Question 13

Milbecycin is used in the eradication of

A Agricultural Fungus

B Agricultural Pests

C Agricultural Herbs

D Agricultural Weeds

Answer: B

Question 14

Name the first woman to become Chief Justice of a state High Court in India.

- A Meera Kumari
- B Leila Seth
- C Anju George
- D Purvi Joshi

Answer: B

Question 15

Which is the coldest planet?

- A Uranus
- B Venus
- C Neptune
- D Jupiter

Answer: C

Question 16

What is the capital of Austria?

- A Buenos Aires
- B Rome
- C Vienna
- D Dublin

Answer: C

Question 17

Chandragupta Maurya was born in

- A 340 BC
- B 563 BC
- C 189 BC
- D 99 BC

Answer: A

Question 18

Jahangir (1605-1627 AD) was the ruler of which dynasty?

- A Nanda
- B Haryanka
- C Maurya
- D Mughal

Answer: D

Question 19

Earth revolves around Sun. Who was the 1st one to present this theory?

- A Albert Einstein
- B Galileo
- C Copernicus
- D Newton

Answer: C

Question 20

..... is same on every point on a rotating body.

- A Linear velocity
- B Linear momentum
- C Angular torque

D Angular velocity

Answer: D

Question 21

The path of a projectile is called its

A Altitude

B Range

C Trajectory

D Flight

Answer: C

Question 22

Bahujan Samaj Party was founded in

A 1925

B 1955

C 1984

D 2001

Answer: C

Question 23

In which language, Lok Sabha debates are printed?

A Hindi

B English

C Sanskrit

D Both Hindi & English

Answer: D

Question 24

Brendon McCullum is a cricketer of

- A South Africa
- B Australia
- C England
- D New Zealand

Answer: D

Question 25

Who wrote the book "The three Musketeers"?

- A EM Forster
- B Gunter Grass
- C Edward Luce
- D Alexandre Dumas

Answer: D

Mathematics

Instructions

For the following questions answer them individually

Question 26

If the amount received at the end of 2nd and 3rd year at Compound Interest on a certain Principal is Rs 32448 and Rs 33745.92 respectively, what is the rate of interest?

- A 2 percent
- B 8 percent
- C 6 percent
- D 4 percent

Answer: D

Explanation:

Compound interest at the end of 2nd year = Rs. 32,448

Compound interest at the end of 3rd year = Rs. 33,745.92

=> Difference = 33745.92 - 32448 = Rs. 1297.92

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

∴ Rate of interest, $r = \frac{1297.92}{32448} \times 100 = 4\%$

=> Ans - (D)

Question 27

If $\cot 2A = x$, then x is

A $2\cot A / (\cot^2 A - 1)$

B $(\cot^2 A - 1) / 2\cot A$

C $(\cot^2 A + 1) / 2\cot A$

D $2\cot A / (\cot^2 A + 1)$

Answer: B

Explanation:

Expression : $\cot(2A)$

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

$$\because \cos(2A) = \cos^2 A - \sin^2 A \text{ and } \sin(2A) = 2\sin A \cos A$$

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

Dividing both numerator and denominator by $(\sin^2 A)$

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

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

$$= \frac{\cot^2 A - 1}{2\cot A}$$

=> Ans - (B)

Question 28

The diagonal of a square equals the side of an equilateral triangle. If the area of the square is $6\sqrt{3}$ sq cm, what is the area of the equilateral triangle?

A $9\sqrt{3}$ sq cm

- B 9 sq cm
- C $9\sqrt{2}$ sq cm
- D 12 sq cm

Answer: B

Explanation:

Let the side of square = s cm and diagonal = d cm

$$\Rightarrow \text{Area of square} = (s)^2 = 6\sqrt{3} \text{ -----(i)}$$

$$\text{In right triangle of the square, } \Rightarrow (s)^2 + (s)^2 = (d)^2$$

Substituting value of s^2 from equation (i)

$$\Rightarrow (d)^2 = 6\sqrt{3} + 6\sqrt{3} = 12\sqrt{3} \text{ -----(ii)}$$

Side of equilateral triangle = Diagonal of square = d cm

$$\therefore \text{Area of equilateral triangle} = \frac{\sqrt{3}}{4}d^2$$

Substituting value of d^2 from (ii), we get :

$$= \frac{\sqrt{3}}{4} \times 12\sqrt{3} = \frac{36}{4} = 9\text{cm}^2$$

\Rightarrow Ans - (B)

Question 29

What is the value of $\sec 30^\circ + \cot 30^\circ$?

- A $(\sqrt{61})/\sqrt{2}$
- B $\sqrt{3}+2$
- C $5/\sqrt{3}$
- D $(\sqrt{32}-\sqrt{2})/\sqrt{6}$

Answer: C

Explanation:

Expression : $\sec 30^\circ + \cot 30^\circ$

$$= \left(\frac{2}{\sqrt{3}}\right) + (\sqrt{3})$$

$$= \frac{2+\sqrt{3}}{\sqrt{3}}$$

$$= \frac{5}{\sqrt{3}}$$

\Rightarrow Ans - (C)

Question 30

Find $(61 + 62 + 63 + \dots + 110) = ?$

- A 4275
- B 8550
- C 12825
- D 17100

Answer: A

Explanation:

Expression : $(61 + 62 + 63 + \dots + 110)$

This is an arithmetic progression with first term, $a = 61$, last term, $l = 110$ and common difference, $d = 1$

Let number of terms = n

Last term in an A.P. = $a + (n - 1)d = 110$

$$\Rightarrow 61 + (n - 1)(1) = 110$$

$$\Rightarrow n - 1 = 110 - 61 = 49$$

$$\Rightarrow n = 49 + 1 = 50$$

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

$$= \frac{50}{2}(61 + 110)$$

$$= 25 \times 171 = 4275$$

$$\Rightarrow \text{Ans - (A)}$$

Question 31

Volume of a cube is 512 cubic cm, find its total surface area? (Take $\pi = 22/7$)

- A 768 sq cms
- B 192 sq cms
- C 384 sq cms
- D 576 sq cms

Answer: C

Explanation:

Let side of cube = a cm

$$\Rightarrow \text{Volume of cube} = (a)^3 = 512$$

$$\Rightarrow a = \sqrt[3]{512} = 8 \text{ cm}$$

∴ Total surface area of cube = $6a^2$

$$= 6(8)^2 = 6 \times 64 = 384 \text{ cm}^2$$

=> Ans - (C)

Question 32

The costs of daily ticket of local train is Rs 160 and Monthly Pass costs Rs 2912. If I buy the Monthly Pass and travel for 26 days in a month then I save?

A 25 percent

B 22 percent

C 18 percent

D 30 percent

Answer: D

Explanation:

Train ticket cost for 1 day = Rs. 160

=> Cost for 26 days = $26 \times 160 = \text{Rs. } 4160$

Cost of monthly pass = Rs. 2912

=> Money saved = $4160 - 2912 = \text{Rs. } 1248$

∴ Required % = $\frac{1248}{4160} \times 100 = 30\%$

=> Ans - (D)

Question 33

Prahlad has done 1/3rd of a job in 30 days, Sarfaraz completes the rest of the job in 90 days. In how many days can they together do the job?

A 27 days

B 18 days

C 54 days

D 36 days

Answer: C

Explanation:

Let total work to be done = 90 units

Work done by Prahlad in 30 days = $\frac{1}{3} \times 90 = 30$ units

Prahlad's efficiency = $\frac{30}{30} = 1$ unit/day

Remaining work = $90 - 30 = 60$ units

Sarfaraz completes 60 units in 90 days

=> Sarfaraz's efficiency = $\frac{60}{90} = \frac{2}{3}$ units/day

(Prahlad + Sarfaraz)'s 1 day's work = $1 + \frac{2}{3} = \frac{5}{3}$ units/day

\therefore Time taken by them together to do the job = $\frac{90}{\frac{5}{3}}$

= $90 \times \frac{3}{5} = 54$ days

=> Ans - (C)

Question 34

If $2x - 3 \leq 5 + x$ and $5 - x < 1 + 5x$; then x can take which of the following values?

A -1

B 1

C -9

D 9

Answer: B

Explanation:

Expression 1 : $2x - 3 \leq 5 + x$

=> $2x - x \leq 5 + 3$

=> $x \leq 8$ -----(i)

Expression 2 : $5 - x < 1 + 5x$

=> $5x + x > 5 - 1$

=> $6x > 4$

=> $x > \frac{2}{3}$ -----(ii)

Combining inequalities (i) and (ii), we get : $\frac{2}{3} < x \leq 8$

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

=> Ans - (B)

Question 35

The price of an article is cut by 9%, to restore to its original value, the new price must be increased by

A 9 percent

- B 8.83 percent
- C 9.89 percent
- D 6.25 percent

Answer: C

Explanation:

Let the original price of the article = Rs. 100

If the price is cut by 9%, => New price = $\frac{100-9}{100} \times 100 = Rs.91$

To restore to its original value the new price must be increased by = $\frac{100-91}{91} \times 100$

$$= \frac{900}{91} \approx 9.89\%$$

=> Ans - (C)

Question 36

If $13A = 11B = 8C$, find $A : B : C$

- A 143:104:88
- B 104:88:143
- C 88:104:143
- D 8:11:13

Answer: C

Explanation:

Let $13A = 11B = 8C = k$

$$\Rightarrow A = \frac{k}{13}, B = \frac{k}{11}, C = \frac{k}{8}$$

$$\Rightarrow \text{Ratio of } A : B : C = \frac{k}{13} : \frac{k}{11} : \frac{k}{8}$$

$$= \frac{1}{13} : \frac{1}{11} : \frac{1}{8}$$

L.C.M. of 8,11 and 13 = 1144, thus multiplying by 1144, we get :

$$= \frac{1144}{13} : \frac{1144}{11} : \frac{1144}{8}$$

$$= 88 : 104 : 143$$

=> Ans - (C)

Question 37

A shopkeeper by selling 21 Nike shoes, earns a profit equal to the selling price of 5 Nike shoes. His profit percentage is

- A 31.25 percent
- B 23.8 percent
- C 47.6 percent
- D 16.35 percent

Answer: A

Explanation:

Let cost price of a shoe = $Rs.x$

Selling price of a shoe = $Rs.y$

=> Selling price of 5 shoes = $Rs.5y$

According to ques, => $21(y - x) = 5y$

=> $21y - 21x = 5y$

=> $16y = 21x$

=> $\frac{x}{y} = \frac{16}{21}$

Let Cost price, $x = 16$ and selling price, $y = 21$

\therefore Profit % = $\frac{y-x}{x} \times 100$

= $\frac{21-16}{16} \times 100$

= $\frac{125}{4} = 31.25\%$

=> Ans - (A)

Question 38

What is the perimeter of the sector whose central angle is 60° and radius of the circle is 21 cm?

- A 128 cm
- B 96 cm
- C 64 cm
- D 32 cm

Answer: C

Explanation:

Central angle = $\theta = 60^\circ$ and radius = $r = 21$ cm

Perimeter of sector = length of arc + ($2 \times$ radius)

Length of arc = $\frac{\theta}{360} \times 2\pi r$

= $\frac{60}{360} \times 2 \times \frac{22}{7} \times 21$

$$= \frac{1}{6} \times 44 \times 3 = \frac{44}{2} = 22 \text{ cm}$$

$$\therefore \text{Perimeter of sector} = 22 + (2 \times 21)$$

$$= 22 + 42 = 64 \text{ cm}$$

=> Ans - (C)

Question 39

Which of the following quadratic equations has real roots?

A $3x^2 - 5x + 2 = 0$

B $3x^2 - 4x + 2 = 0$

C $4x^2 - 3x + 2 = 0$

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

Answer: A

Explanation:

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

(A) : $3x^2 - 5x + 2 = 0$

$$\Rightarrow D = (-5)^2 - 4(3)(2) = 25 - 24 = 1$$

(B) : $3x^2 - 4x + 2 = 0$

$$\Rightarrow D = (-4)^2 - 4(3)(2) = 16 - 24 = -8$$

(C) : $4x^2 - 3x + 2 = 0$

$$\Rightarrow D = (-3)^2 - 4(4)(2) = 9 - 32 = -23$$

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

$$\Rightarrow D = (-2)^2 - 4(5)(2) = 4 - 40 = -36$$

Thus, the equation : $3x^2 - 5x + 2 = 0$ has real roots.

Question 40

Which of the following is correct?

A $(3x - 2y)^2 = 9x^2 - 12xy + 4y^2$

B $(3x - 2y)^2 = 9x^2 - 6xy + 4y^2$

C $(3x + 2y)^2 = 9x^2 - 12xy + 4y^2$

D $(3x + 2y)^2 = 9x^2 - 6xy + 4y^2$

Answer: A

Explanation:

Expression : $(3x - 2y)^2$

$$= (3x)^2 + (-2y)^2 + 2(3x)(-2y)$$

$$= 9x^2 + 4y^2 - 12xy$$

$$\Rightarrow (3x + 2y)^2$$

$$= (3x)^2 + (2y)^2 + 2(3x)(2y)$$

$$= 9x^2 + 4y^2 + 12xy$$

$$\Rightarrow \text{Ans - (A)}$$

Question 41

The sum of the parallel sides of a trapezium is 12.4 cm. If the distance between the parallel sides is 3.5 cm, what is the area of this trapezium?

A 43.4 sq cm

B 86.8 sq cm

C 130.2 sq cm

D 21.7 sq cm

Answer: D

Explanation:

Sum of parallel sides of trapezium = 12.4 cm

Height of trapezium = 3.5 cm

Area of trapezium = $\frac{1}{2} \times (\text{sum of parallel sides}) \times \text{height}$

$$= \frac{1}{2} \times 12.4 \times 3.5$$

$$= 6.2 \times 3.5 = 21.7 \text{ cm}^2$$

$$\Rightarrow \text{Ans - (D)}$$

Question 42

Of the four numbers whose average is 91, the first is 3/10 times the sum of other three. The first number is:

A 126

B 56

C 168

D 84

Answer: D

Explanation:

Let the four numbers be w, x, y, z

$$\text{Average of 4 numbers} = \frac{(w+x+y+z)}{4} = 91$$

$$\Rightarrow w + x + y + z = 91 \times 4 = 364$$

$$\text{According to ques, } \Rightarrow w = \frac{3}{10} \times (x + y + z)$$

$$\Rightarrow w = \frac{3}{10} \times (364 - w)$$

$$\Rightarrow 10w = 1092 - 3w$$

$$\Rightarrow 10w + 3w = 13w = 1092$$

$$\Rightarrow w = \frac{1092}{13} = 84$$

\Rightarrow Ans - (D)

Question 43

If $4x + 3y = 11$ and $3x + 2y = 8$, then (x,y) is

A 2, 0

B 1, 6

C 2, 1

D 5, 6

Answer: C

Explanation:

$$\text{Equation 1 : } (4x + 3y = 11) \times 2$$

$$\text{Equation 2 : } (3x + 2y = 8) \times 3$$

Multiplying equation (i) by 2 and equation (ii) by 3, we get :

$$\Rightarrow 8x + 6y = 22 \text{ -----(iii)}$$

$$\text{and } 9x + 6y = 24 \text{ -----(iv)}$$

$$\text{Subtracting equation (iii) from (iv), } \Rightarrow (9x - 8x) = (24 - 22)$$

$$\Rightarrow x = 2$$

$$\text{Substituting it in equation (i), } \Rightarrow 3y = 11 - 4(2)$$

$$\Rightarrow 3y = 11 - 8 = 3$$

$$\Rightarrow y = \frac{3}{3} = 1$$

$$\therefore (x, y) = (2, 1)$$

\Rightarrow Ans - (C)

Question 44

What should be the average speed of a car to cover a distance of 189 km in 3.5 hours?

A 15 m/s

B 54 m/s

C 27 m/s

D 30 m/s

Answer: A

Explanation:

The car covers 189 km in 3.5 hours

$$\text{Speed of car (in km/h)} = \frac{189}{3.5} = 54 \text{ km/hr}$$

$$\Rightarrow \text{Speed of car (in m/s)} = 54 \times \frac{5}{18}$$

$$= 3 \times 5 = 15 \text{ m/s}$$

\Rightarrow Ans - (A)

Question 45

If $\sec A / (\sec A - 1) + \sec A / (\sec A + 1) = x$, then x is

A $2\operatorname{cosec}^2 A$

B $2\sec^2 A$

C $2\operatorname{cosec} A$

D $2\sec A$

Answer: A

Explanation:

$$\text{Expression: } \frac{\sec A}{\sec A - 1} + \frac{\sec A}{\sec A + 1}$$

$$= \left[\left(\frac{1}{\cos A} \right) \div \left(\frac{1}{\cos A} - 1 \right) \right] + \left[\left(\frac{1}{\cos A} \right) \div \left(\frac{1}{\cos A} + 1 \right) \right]$$

$$\begin{aligned}
&= \left[\left(\frac{1}{\cos A} \right) \div \left(\frac{1-\cos A}{\cos A} \right) \right] + \left[\left(\frac{1}{\cos A} \right) \div \left(\frac{1+\cos A}{\cos A} \right) \right] \\
&= \left[\left(\frac{1}{\cos A} \right) \times \left(\frac{\cos A}{1-\cos A} \right) \right] + \left[\left(\frac{1}{\cos A} \right) \times \left(\frac{\cos A}{1+\cos A} \right) \right] \\
&= \left(\frac{1}{1-\cos A} \right) + \left(\frac{1}{1+\cos A} \right) \\
&= \frac{(1+\cos A)+(1-\cos A)}{(1+\cos A)(1-\cos A)} = \frac{2}{1-\cos^2 A} \\
&= \frac{2}{\sin^2 A} = 2\operatorname{cosec}^2 A
\end{aligned}$$

=> Ans - (A)

Question 46

What is the slope of the line perpendicular to the line passing through the points (6,3) and (2,7)?

A 1

B -1

C 1/2

D 1/2

Answer: A

Explanation:

Slope of line passing through points (6,3) and (2,7)

$$= \frac{7-3}{2-6} = \frac{4}{-4} = -1$$

Product of slopes of two perpendicular lines is -1

=> Slope of the line perpendicular to the line having slope -1 = 1

=> Ans - (A)

Question 47

Refer the below data table and answer the following question.

	Number of Employees	Annual Salary	Bonus as percent of annual salary
Manager	3	60	50%
Executive	8	20	30%
Trainee	3	4	10%

What is the average bonus (in rupees) ?

A 13920004

B 280000

C 364000

D 994286

Answer: D

Explanation:

Total bonus of managers (in lakh) = $3 \times 60 \times \frac{50}{100} = 90$ lakhs

Total bonus of executive (in lakh) = $8 \times 20 \times \frac{30}{100} = 48$ lakhs

Total bonus of trainee (in lakh) = $3 \times 4 \times \frac{10}{100} = 1.2$ lakhs

=> Average bonus in rupees = $\frac{(90+48+1.2)}{(3+8+3)}$

= $\frac{139.2}{14} = 9.94286$ lakhs = 9,94,286

=> Ans - (D)

Question 48

Refer the below data table and answer the following question

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

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

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

Answer: D

Explanation:

Total exports from the three companies together in :

2011 = 5000 + 3000 + 3000 = 11000

2012 = 4000 + 1000 + 5000 = 10000

2013 = 2000 + 2000 + 1000 = 5000

2014 = 1000 + 4000 + 3000 = 8000

2015 = 3000 + 3000 + 2000 = 8000

Clearly, total exports in 2014 and 2015 are equal to 8000

=> Ans - (D)

Question 49

Refer the below data table and answer the following question

Year	Profit or Loss
2011	-20
2012	10
2013	5
2014	-15
2015	15

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

- A Loss of Rs 15 crores
- B Loss of Rs 5 crores
- C Profit of Rs 5 crores
- D Profit of Rs 15 crores

Answer: B

Explanation:

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

$$= -20 + 10 + 5 - 15 + 15$$

$$= 15 - 20 = -5$$

Since, it is negative, thus loss of Rs. 5 crore

=> Ans - (B)

Question 50

Refer the below data table and answer the following question

India's Exports in 2015	Value in millions US\$
Jewellery	650
Software	725
Cotton	750
Steel	825
Electronics	650

Steel was what percent of total exports ?

- A 22.92 percent
- B 25.42 percent
- C 27.92 percent
- D 20.42 percent

Answer: A

Explanation:

Value in millions of Steel = 825

Total exports = 650 + 725 + 750 + 825 + 650 = 3600

=> % of Steel in total exports = $\frac{825}{3600} \times 100$

= $\frac{825}{36} = 22.916 \approx 22.92\%$

=> Ans - (A)

Reasoning

Instructions

For the following questions answer them individually

Question 51

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

Taj Mahal : Agra :: Old Fort : ?

- A Delhi
- B Hyderabad
- C Jaipur
- D Jodhpur

Answer: A

Explanation:

Expression = Taj Mahal : Agra :: Old Fort : ?

Taj Mahal is situated in Agra, similarly Old Fort is situated in *Delhi*.

=> Ans - (A)

Question 52

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

MYANMAR : NZBNLZQ :: BRITAIN : ?

- A CSJTHZM

B CSJTZHM

C CSJTMZH

D CSJMTZH

Answer: B

Explanation:

Expression = MYANMAR : NZBNLZQ :: BRITAIN : ?

The pattern followed is :

M	Y	A	N	M	A	R
(+1)	(+1)	(+1)	(+0)	(-1)	(-1)	(-1)
N	Z	B	N	L	Z	Q

Similarly, for BRITAIN :

B	R	I	T	A	I	N
(+1)	(+1)	(+1)	(+0)	(-1)	(-1)	(-1)
C	S	J	T	Z	H	M

=> Ans - (B)

Question 53

Select the related word/letters/number from the given alternatives. EM : JZ :: KL : ?

A VX

B VY

C UX

D TU

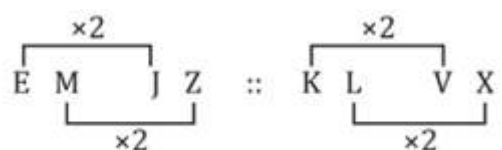
Answer: A

Explanation:

Expression = EM : JZ :: KL : ?

The pattern followed is that when numerical values are assigned to the alphabets, they are multiplied by 2.

Eg :- E = 5 \equiv 5 \times 2 = 10 \equiv J



Thus, KL : **VX**

=> Ans - (A)

Question 54

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

79 : 63 :: 54 : ?

A 42

B 46

C 64

D 20

Answer: D

Explanation:

Expression = 79 : 63 :: 54 : ?

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

Eg :- $7 \times 9 = 63$

Similarly, $5 \times 4 = 20$

=> Ans - (D)

Question 55

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

A Border Security Force

B Central Reserve Police Force

C IndoTibetan Border Police Force

D Indian Air Force

Answer: D

Explanation:

Except Indian Air Force other three are central Armed police force, hence it is the odd one out.

=> Ans - (D)

Question 56

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

A JQ

Explanation:

Sum of digits in 4313 is an odd number and in rest three it is an even number, hence it is the odd one out.

=> Ans - (A)

Question 59

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. Hindi, ?, Telugu, Marathi, Tamil.

A English

B Bengali

C French

D German

Answer: B

Explanation:

Series of Indian regional language is given.

= Hindi, Bengali, Telugu, Marathi

=> Ans - (B)

Question 60

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

AT, CR, FO, JK, ?

A PE

B QD

C NM

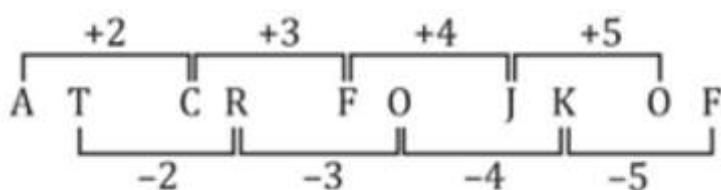
D OF

Answer: D

Explanation:

Expression : AT, CR, FO, JK, ?

The pattern followed is :



Thus, missing term = OF

=> Ans - (D)

Question 61

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

A ST

B FG

C HI

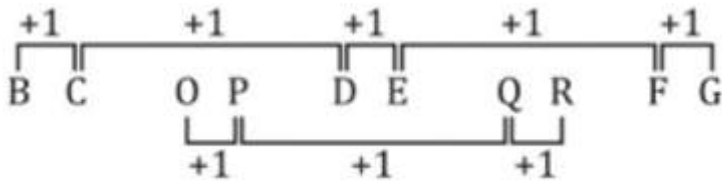
D UV

Answer: B

Explanation:

Expression : BC, OP, DE, QR, ?

Consecutive pairs of English alphabets are given in alternate terms.



Thus, missing term = FG

=> Ans - (B)

Question 62

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

250, 370, 394, 400, ?

A 401

B 404

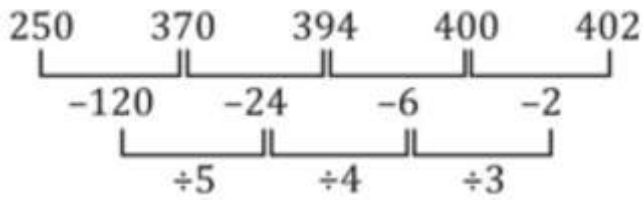
C 402

D 406

Answer: C

Explanation:

The pattern followed is :



Thus, missing term = 402

=> Ans - (C)

Question 63

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) All flowers are stems.

(II) All stems are roots.

Conclusion:

(I) All roots are flowers.

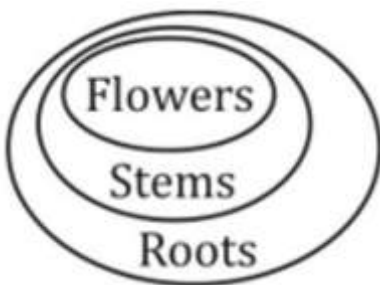
(II) All stems are flowers.

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

Answer: C

Explanation:

The venn diagram for above statements is :



Conclusion:

- (I) All roots are flowers = false
- (II) All stems are flowers = false

Thus, neither I nor II follows

=> Ans - (C)

Question 64

Karan, Arjun, Preeti, Priya and Ashish are travelling in a car. Three years ago, the average age of Arjun, Preeti and Priya was 42 years. If the present age of Karan is 65 years and the present average age of all five is 50 years, then what is the present age of Ashish?

- A 50 years
- B 60 years
- C 70 years
- D 80 years

Answer: A

Explanation:

Let Ashish's present age = x years

Average age of Arjun, Preeti and Priya 3 years ago = 42 years

$$\Rightarrow \text{Sum of present ages of Arjun, Preeti and Priya} = (42 + 3) \times 3 = 45 \times 3 = 135$$

Present age of Karan = 65 years

Average present age of all five persons = 50 years

$$\Rightarrow \text{Total age of five persons} = 50 \times 5 = 250 \text{ years}$$

$$\Rightarrow x + 65 + 135 = 250$$

$$\Rightarrow x = 250 - 200 = 50 \text{ years}$$

\Rightarrow Ans - (A)

Question 65

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

- i. Ramification
- ii. Rampant
- iii. Rapport
- iv. Radical

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

Answer: C

Explanation:

As per the order of dictionary :

= Radical -> Ramification -> Rampant -> Rapport

≡ iv, i, ii, iii

=> Ans - (C)

Question 66

In a certain code language, "TEACHER" is written as "6427341" and "MAN" is written as "825". How is "MERCHANT" written in that code language ?

A 84172563

B 84172365

C 84173256

D 84132756

Answer: C

Explanation:

The codes for each letter is given :

M -> 8

E -> 4

R -> 1

C -> 7

H -> 3

A -> 2

N -> 5

T -> 6

Thus, MERCHANT : **84173256**

=> Ans - (C)

Question 67

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

5	7	6
2	4	7
129	359	?

A 526

B 652

C 265

D 256

Answer: C

Explanation:

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

$$\text{Eg :- } 5^3 + 2^2 = 125 + 4 = 129$$

$$7^3 + 4^2 = 343 + 16 = 359$$

$$\text{Similarly, } 6^3 + 7^2 = 216 + 49 = 265$$

=> Ans - (C)

Question 68

If "#" means "subtraction", "&" means "division", "@" means "addition" and "%" means "multiplication", then $8442 \& 9 \# 7 \% 6 @ 4 = ?$

A 912

B 900

C 938

D 918

Answer: B

Explanation:

Expression : $8442 \& 9 \# 7 \% 6 @ 4 = ?$

$$\equiv 8442 \div 9 - 7 \times 6 + 4$$

$$= \left(\frac{8442}{9}\right) - (7 \times 6) + 4$$

$$= 938 - 42 + 4 = 900$$

=> Ans - (B)

Question 69

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

_ABBI_R_B_IT_AB_IT

A RBATRB

B RATBRB

C RTBARB

D RTABRB

Answer: D

Explanation:

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

= RABBIT RABBIT RABBIT

=> Ans - (D)

Question 70

A boy leaves his school and travels 20 km towards the north. He takes a left turn and travels 30 km, then he turns towards the east direction and travels 50 km further. Finally, he turns to his right and travels 20 km more. Which direction is he now with respect to his school?

A SouthEast

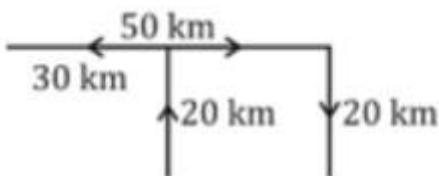
B West

C East

D NorthEast

Answer: C

Explanation:



A boy leaves his school and travels 20 km towards the north. He takes a left turn and travels 30 km towards west, then he turns towards the east direction and travels 50 km further (i.e. again covering the previous 30 km). Finally, he turns to his right and travels 20 km towards south.

Thus, he is in east direction from his school.

=> Ans - (C)

Question 71

Word A 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, F can be represented by 55, 13, etc., and R can be represented by 76, 30, etc. Similarly, you have to identify the set for the word PHONE.

Matrix-I

	0	1	2	3	4
0	G	N	G	N	H
1	H	G	N	F	P
2	G	H	Y	P	N
3	R	G	H	S	N
4	H	N	P	B	L

Matrix-II

	5	6	7	8	9
5	F	E	L	R	P
6	O	N	R	E	O
7	O	R	P	J	F
8	R	P	W	O	Y
9	O	V	E	P	E

- A 98, 10, 58, 12, 99
- B 59, 04, 95, 01, 56
- C 77, 21, 65, 33, 68
- D 86, 40, 75, 13, 97

Answer: B

Explanation:

- (A) : 98, 10, 58, 12, 99 = PHRNE
- (B) : 59, 04, 95, 01, 56 = **PHONE**
- (C) : 77, 21, 65, 33, 68 = PHOSE
- (D) : 86, 40, 75, 13, 97 = PHOFE

=> Ans - (B)

Question 72

Introducing a girl, Pooja says, "Her mother's son is the nephew of my father". How is the girl related to Pooja?

- A Niece

B Daughter

C Sister

D Cousin

Answer: D

Explanation:

The girl's mother's son = girl's brother

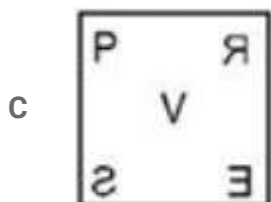
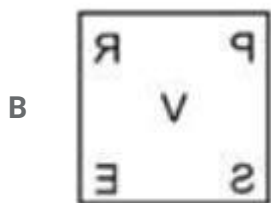
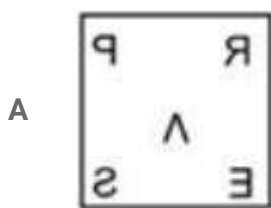
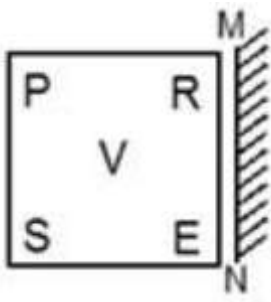
Now, the girl's brother is nephew of Pooja's father, => Pooja and the girl's brother are cousins.

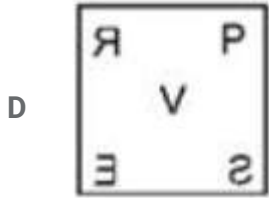
Thus, Pooja and the girl are also cousins.

=> Ans - (D)

Question 73

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

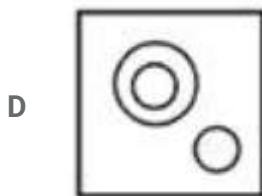
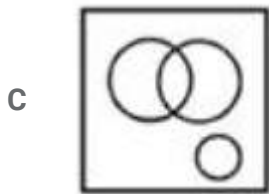
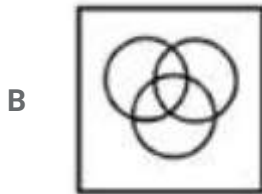




Answer: B

Question 74

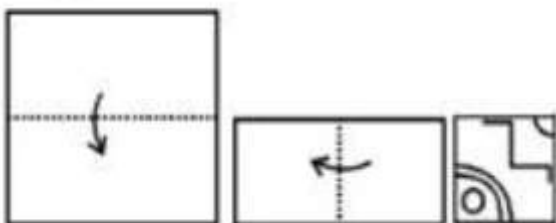
Identify the diagram that best represents the relationship among the given classes. Brass, Bronze, Alloy

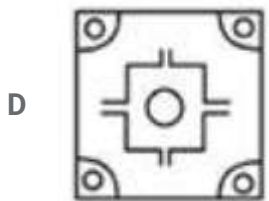
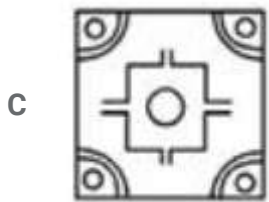
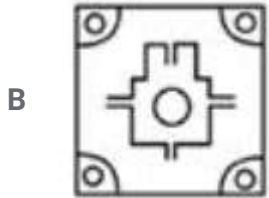
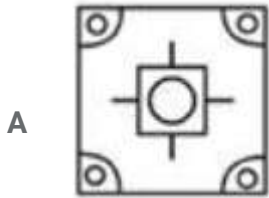


Answer: A

Question 75

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: C

English

Instructions

For the following questions answer them individually

Question 76

Rearrange the parts of the sentence in correct order.

In some seats, the

Pwinning margin, thereby

Qvotes for NOTA have been larger than the

Rdetermining the result

A RPQ

B QRP

C QPR

D PRQ

Answer: C

Question 77

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

The elephant in the room

- A A very fat man
- B When a big person is finally trapped
- C An obvious problem that no one wants to discuss
- D One person who is strong enough to defeat everybody else

Answer: C

Question 78

Select the synonym of redemption

- A forfeit
- B atonement
- C retribution
- D penalty

Answer: B

Question 79

Improve the bracketed part of the sentence.

Ajay, who (was studying) architecture at present, hopes to go to Australia after graduation.

- A studies
- B has been studying
- C is studying
- D no improvement

Answer: C

Question 80

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

to imply or suggest an idea in addition to the literal meaning

- A to nub
- B to connote
- C to malign
- D to purport

Answer: B

Question 81

Select the word with the correct spelling.

- A encroch
- B stingiely
- C capittate
- D placated

Answer: D

Question 82

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.

They have published the names of all the successful candidates.

- A The candidates who have succeeded their names they had published.
- B The names of all the successful candidates have been published by them.
- C The candidates who have succeeded their names have been published by them.
- D The names of all the successful candidates were published by them.

Answer: B

Question 83

Select the word with the correct spelling.

- A chastise
- B adellaide
- C paarlance
- D bouttique

Answer: A

Question 84

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'.

To improve your vocabulary(A)/one thing that you should do (B)/is to read Times of India(C)/No error(D)

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

Answer: C

Question 85

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 professor informed that (A)/they had all done(B)/very badly.(C)/No error(D)

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

Answer: D

Question 86

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

to make from scratch

- A The universe was created out of nothing
- B To do something from the beginning
- C To build something out of nothing
- D One scratch if neglected will destroy the structure eventually

Answer: B

Question 87

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

to resolve a sentence into its component parts and describe their syntactic roles

- A to dissect
- B to anatomize
- C to parse
- D to synthesize

Answer: C

Question 88

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 primary objective of a socialist government is tothe miseries of the poor.

- A mollify
- B mitigate
- C soothe
- D abet

Answer: B

Question 89

Rearrange the parts of the sentence in correct order:

They not only

Ptech activists on to the streets

Qran an innovative and creative campaign, but

Rwere also able to bring

A RQP

B RPQ

C PRQ

D QRP

Answer: D

Question 90

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.

They said, "We are starting now."

A They said that we were starting then.

B They said that they were starting now.

C They said that they would be starting now.

D They said that they were starting then.

Answer: B

Question 91

**Select the synonym of
haste**

A soon

B eventually

C later

D never

Answer: A

Question 92

Improve the bracketed part of the sentence
The Saranda forest is infested (with) King Cobras.

- A of
- B in
- C from
- D no improvement

Answer: D

Question 93

Select the antonym of
provision

- A removal
- B cater
- C plan
- D stock

Answer: A

Question 94

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 unfortunate family could do nothing, butthe death of their sole bread winner.

- A wail
- B languish
- C mourn
- D repent

Answer: C

Question 95

**Select the antonym of
sortie**

- A raid
- B assault
- C sally
- D retreat

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.

The committeecriminal justice reforms recommended a threefold strategy to arrest the drift and to prevent total disaster. First, the law, substantive and procedural, requires a freshlook based on changes in society and economypriorities in governance. The guidingin the reform process should be decriminalisation whereverand diversion, reserving the criminal justice system mainly to deal with real "hard" crimes.

Question 96

The committee criminal justice reforms

- A of
- B on
- C for
- D upon

Answer: B

Question 97

requires a fresh look based on changes

- A full
- B complete
- C through

D comprehensive

Answer: D

Question 98

economy priorities in governance.

A as well as

B and

C and also

D plus

Answer: A

Question 99

The guiding in the reform

A law

B rule

C principle

D path

Answer: C

Question 100

process should be decriminalisation wherever and diversion

A possible

B allowed

C imaginable

D viable

Answer: A

SSC CHSL 22 Jan 2017 Evening Shift

English

Instructions

For the following questions answer them individually

Question 1

Select the synonym of pal

- A buddy
- B lad
- C foe
- D dude

Answer: A

Question 2

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

having a sensation of whirling and a tendency to fall or stagger

- A volatile
- B wild
- C reckless
- D giddy

Answer: D

Question 3

Improve the bracketed part of the sentence.

(It is no good to cry) over past failures.

- A It is of no good crying
- B It is of no good to cry
- C It is no good crying
- D no improvement

Answer: C

Question 4

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'.

Sairat is one of the latest(A)/in the list of contemporary Marathi movies(B)/which appeared in recent times. (C)/No error(D)

A A

B B

C C

D D

Answer: C

Question 5

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.

A month before he was scheduled to be hanged from the, the president granted him clemency.

A gallows

B balcony

C stands

D frame

Answer: A

Question 6

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

If you can't beat 'em, join 'em

A Many times those who fight eventually become best of friends

B If one has to give up fighting with some group because one can't win, band together with them

C Not to hurt others. Instead, be friends with them.

D To fight till you get acceptance to a group which does not initially accept you as a member

Answer: B

Question 7

Select the antonym of bequeath

A receive

B impart

C bestow

D entrust

Answer: A

Question 8

Choose the antonym of stun

A petrify

B calm

C flabbergast

D stupefy

Answer: B

Question 9

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.

Preeti ran the race in record time.

A In record time Preeti ran the race.

B The race was run by Preeti in record time.

C The race was being run by Preeti in record time.

D The race had been ran by Preeti in record time.

Answer: B

Question 10

Improve the bracketed part of the sentence.

I went to sleep last night, (almost as soon as) my head hit the pillow.

- A no sooner then
- B as quickly as
- C almost as quickly as
- D no improvement

Answer: D

Question 11

Select the word with the correct spelling.

- A aplauds
- B neonaetes
- C bestiary
- D pinnioned

Answer: C

Question 12

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

All good things must come to an end

- A Even enjoyable experiences cannot last for ever
- B A good story should always have a happy ending
- C The world will be destroyed one day
- D Only bad things can continue forever. Life of good things feel short.

Answer: A

Question 13

Select the synonym of to defile

- A to esteem
- B to besmirch
- C to elevate
- D to sanctify

Answer: B

Question 14

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 am better(A)/adapted to the(B)/climate than you.(C)/No error(D)

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

Answer: D

Question 15

Rearrange the parts of the sentence in correct order.

It is high time

Pabout the cost and

Qthe government started thinking

Rquality of power supply

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

Answer: C

Question 16

Rearrange the parts of the sentence in correct order.

For India, therefore,

Priority along with nuclear safety Q nuclear security is not a new objective, R but has always been

A RQP

B RPQ

C PRQ

D QRP

Answer: D

Question 17

Select the word with the correct spelling.

A frackture

B thiners

C aproved

D divining

Answer: D

Question 18

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 researchers areinto the mode of life of diabetes patients as diabetes is a lifestyle ailment.

A inspecting

B investigating

C observing

D seeing

Answer: B

Question 19

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.

Puneet said, "I have been reading a story book".

- A Puneet said he has been reading a story book.
- B Puneet said that he had been reading a story book.
- C Puneet said that he has been reading a story book.
- D Puneet said that he had read a story book.

Answer: B

Question 20

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

a person who is not accepted by a social group, especially because he or she is not liked, respected, or trusted

- A fugitive
- B vagrant
- C pariah
- D tramp

Answer: C

Instructions

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

The new claim thatout of misplaced confidence that all that is in education can beis that the 'per unit cost of outcome' is lower in private schools. Meaning that eventhe learning outcomes of private schools are not betterthe public schools, the costrunning private schools is much lower.

Question 21

The new claim thatout of misplaced

- A emerging

B emerge

C was emerged

D emerged

Answer: D

Question 22

education can beis that the 'per unit cost of outcome' is lower in private schools.

A quantified

B counted

C totalled

D scored

Answer: A

Question 23

Meaning that eventhe learning outcomes of private schools

A if

B when

C whereas

D as

Answer: A

Question 24

betterthe public schools

A then

B than

C to

D as

Answer: B

Question 25

the costrunning private schools is much lower.

- A for
- B about
- C of
- D with

Answer: C

Reasoning

Instructions

For the following questions answer them individually

Question 26

Select the related word/letters/number from the given alternatives. Intelligent : Dumb :: Inflate: ?

- A Raise
- B Deflate
- C Degrade
- D Aerated

Answer: B

Explanation:

Expression = Intelligent : Dumb :: Inflate: ?

Intelligent and dumb are antonyms, similarly opposite of inflate is *deflate*.

=> Ans - (B)

Question 27

Select the related word/letters/number from the given alternatives. FS: IT :: QT: ?

A PR

B TU

C ST

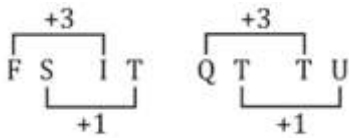
D TQ

Answer: B

Explanation:

Expression = FS: IT :: QT: ?

The pattern followed is :



Thus, QT : **TU**

=> Ans - (B)

Question 28

Select the related word/letters/number from the given alternatives. HI : 17 :: PQ : ?

A 37

B 24

C 30

D 33

Answer: D

Explanation:

Expression = HI : 17 :: PQ : ?

The numerical values of the alphabets are added.

Eg :- H = 8 , I = 9 \equiv 8 + 9 = 17

Similarly, P = 16 , Q = 17 \equiv 16 + 17 = 33

=> Ans - (D)

Question 29

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

4: 1024 :: 7 : ?

A 343

B 2401

C 16807

D 196

Answer: C

Explanation:

Expression = 4: 1024 :: 7 : ?

The pattern followed is = $x : x^5$

Eg :- $4 : 4^5 = 4 : 1024$

Similarly, $7^5 = 16807$

=> Ans - (C)

Question 30

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

A Xenon

B Hydrogen

C Argon

D Helium

Answer: B

Explanation:

Except Hydrogen other three are noble gases, hence it is the odd one out.

=> Ans - (B)

Question 31

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

A CLU

B HQZ

C AJS

D OXF

Answer: D

Explanation:

(A) : C (+9 letters) = L (+9 letters) = U

(B) : H (+9 letters) = Q (+9 letters) = Z

(C) : A (+9 letters) = J (+9 letters) = S

(D) : O (+9 letters) = X (+8 letters) = F

=> Ans - (D)

Question 32

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

A TSR

B QPO

C NML

D ABC

Answer: D

Explanation:

Except for ABC, other letters are written in inverse order according to English alphabetical order, hence ABC is the odd one out.

=> Ans - (D)

Question 33

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

A 7642

B 4520

C 3927

D 5841

Answer: D

Explanation:

The product of first two digits is equal to the last two digits, but $5 \times 8 \neq 41$, hence 5841 is the odd one out.

=> Ans - (D)

Question 34

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. Leaf, Caterpillar, Frog, ?

- A Grasshopper
- B Snake
- C Cow
- D Deer

Answer: B

Explanation:

A food chain is given, where a frog is eaten by a snake.

= Leaf -> Caterpillar -> Frog -> Snake

=> Ans - (B)

Question 35

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. CD, FA, IX, LU, ?

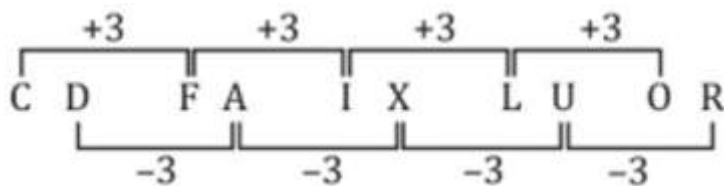
- A TU
- B RS
- C OP
- D OR

Answer: D

Explanation:

Expression : CD, FA, IX, LU, ?

The pattern followed is :



Thus, missing term = **OR**

=> Ans - (D)

Question 36

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. RT, ?, ZB, DF

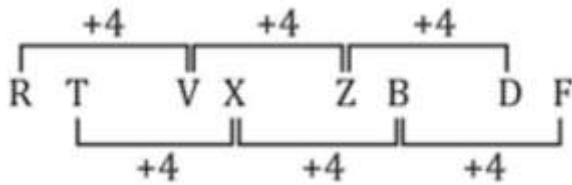
- A WX
- B VX
- C VY
- D UV

Answer: B

Explanation:

Expression : RT, ?, ZB, DF

The pattern followed is :



Thus, missing term = VX

=> Ans - (B)

Question 37

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

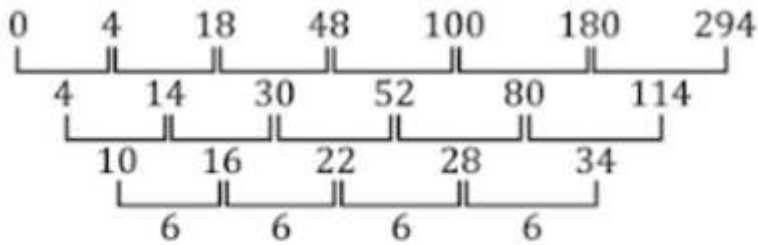
0, 4, 18, 48, 100, 180, ?

- A 294
- B 211
- C 186
- D 222

Answer: A

Explanation:

The pattern followed is :



Thus, missing term = 294

=> Ans - (A)

Question 38

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) All young girls are modern.
- (II) No modern men are superstitious.

Conclusion:

- (I) No girls are superstitious.
- (II) No young men are superstitious.

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

Answer: C

Question 39

If the age of Rahul is 5 years more than his friend Ajay's age and the age of Rahul's wife is 6 years less than Rahul, and Ajay's wife is 1 year older than Rahul's wife, then which of the following statements is true?

- A Rahul's age and Ajay's wife's age is same.
- B Ajay's wife's age and Ajay's age is same.
- C Rahul and Ajay are of the same age.
- D Rahul and Ajay's age difference is 3 years.

Answer: B

Explanation:

Let Ajay's age = x years

=> Rahul's age = $(x + 5)$ years

=> Rahul's wife's age = $(x + 5) - 6 = (x - 1)$ years

∴ Ajay's wife's age = $(x - 1) + 1 = x$ years

Thus, Ajay's wife's age and Ajay's age is same.

=> Ans - (B)

Question 40

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

i. Forbes

ii. Forest

iii. Forensic

iv. Formation

A iii, ii, iv, i

B iv, iii, ii, i

C i, ii, iii, iv

D i, iii, ii, iv

Answer: D

Explanation:

As per the order of dictionary :

= Forbes -> Forensic -> Forest -> Formation

≡ i, iii, ii, iv

=> Ans - (D)

Question 41

In a certain code language, "STATION" is written as "5313462" and "RED" is written as "789". How is "TRAIN" written in that code language?

A 73241

B 37421

C 37142

D 37412

Answer: C

Explanation:

The codes for each letter is given :

T -> 3

R -> 7

A -> 1

I -> 4

N -> 2

Thus, TRAIN : **37142**

=> Ans - (C)

Question 42

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

6	16	?
7	23	17
8	9	30

A 27

B 25

C 12

D 14

Answer: B

Explanation:

The sum of each row is same.

$$\text{Eg :- } 7 + 23 + 17 = 47$$

$$\text{and } 8 + 9 + 30 = 47$$

$$\text{Similarly, } 6 + 16 + x = 47$$

$$\Rightarrow x = 47 - 22 = 25$$

=> Ans - (B)

Question 43

If "S" denotes "multiplied by", "V" denotes "subtracted from", "M" denotes "added to" and "L" denotes "divided by", then

$$72 \text{ L } 24 \text{ S } 3 \text{ V } 7 \text{ M } 2 = ?$$

A 4

B 6

C 8

D 10

Answer: A

Explanation:

Expression : $72 \div 24 \times 3 - 7 + 2$ =?

$$\equiv 72 \div 24 \times 3 - 7 + 2$$

$$= (3 \times 3) - 5$$

$$= 9 - 5 = 4$$

=> Ans - (A)

Question 44

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

a_d_bd_ab_dd

A badd

B ddba

C bcda

D dbac

Answer: A

Explanation:

The pattern followed is that the term 'abd' is repeated with d's increasing after each term

= abd abdd abddd

=> Ans - (A)

Question 45

Mohan is chasing a bike which is moving in the southwest direction. In which direction is Mohan moving?

A North

B East

C Northeast

D Southwest

Answer: D

Explanation:

If Mohan is chasing a bike, then Mohan is also moving in the direction of the bike, i.e. South-west direction.

=> Ans - (D)

Question 46

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, 'K' can be represented by 22, 04, etc., and 'P' can be represented by 77, 98, etc. Similarly, you have to identify the set for the word 'STRAIN'.

Matrix - I

	0	1	2	3	4
0	L	D	S	G	K
1	L	R	S	I	F
2	L	I	K	R	F
3	I	K	S	Z	R
4	C	K	Y	R	Y

Matrix - II

	5	6	7	8	9
5	A	N	X	X	K
6	Q	T	T	T	K
7	U	A	P	N	A
8	U	V	A	T	N
9	U	V	W	P	A

A 12, 88, 43, 76, 21, 78

B 87, 66, 11, 79, 13, 33

C 32, 68, 43, 85, 97, 56

D 02, 65, 97, 34, 79, 44

Answer: A

Explanation:

(A) : 12, 88, 43, 76, 21, 78 = **STRAIN**

(B) : 87, 66, 11, 79, 13, 33 = ATRAIZ

(C) : 32, 68, 43, 85, 97, 56 = STRUWN

(D) : 02, 65, 97, 34, 79, 44 = SQWRAY

=> Ans - (A)

Question 47

Abhishek is Byomkesh's brother and Vimal is Jackie's father. Ella is Byomkesh's mother. Abhishek and Jackie are brothers. How is Ella related to Vimal?

- A Wife
- B Daughter
- C Mother
- D Sister

Answer: A

Explanation:

Abhishek is Byomkesh's brother and Abhishek and Jackie are brothers.

Vimal is Jackie's father, => Vimal is the father of Abhishek, Byomkesh and Jackie.

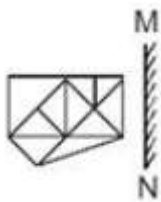
Ella is Byomkesh's mother, => Ella and Vimal are married.

Thus, Ella is the wife of Vimal.

=> Ans - (A)

Question 48

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

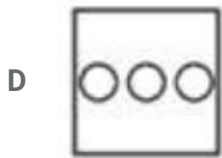
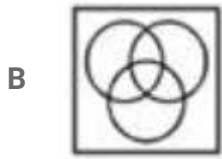




Answer: D

Question 49

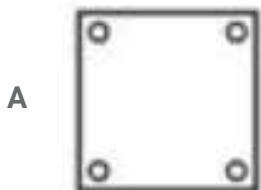
Identify the diagram that best represents the relationship among the given classes. Sweets, Ladoo, Jalebi

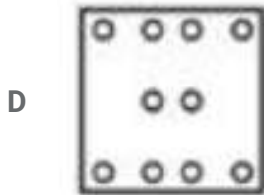
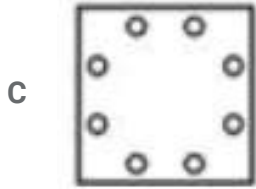
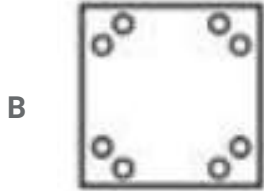


Answer: C

Question 50

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: C

General Awareness

Instructions

For the following questions answer them individually

Question 51

Which of these railway stations is a World Heritage Site?

- A Kharagpur Railway Station
- B Howrah Station
- C Chhatrapati Shivaji Terminus
- D Kanpur Central

Answer: C

Question 52

Name the first female Nobel Prize winner from India.

- A Indira Gandhi
- B Mother Teresa
- C Kavitha Krishnan
- D Sarojini Naidu

Answer: B

Question 53

Intestinal bacteria synthesizes which of the following in the human body?

- A Vitamin K
- B Proteins
- C Fats
- D Vitamin D

Answer: A

Question 54

.....is the study of the physical form and external structure of plants.

- A Physiology
- B Anatomy
- C Phytomorphology
- D Cytology

Answer: C

Question 55

Which of the following is a structural and functional unit of kidneys?

- A Renette Cells
- B Flame Cells
- C Nephrites

D Nephrons

Answer: D

Question 56

The Chemical formula of Acetic acid is

A CH₃COH

B CH₃COOH

C CH₃COCH₃

D CH₂COOH

Answer: B

Question 57

The common name of sodium tetraborate decahydrate is

A epsom salt

B gypsum

C Borax

D galena

Answer: C

Question 58

ASP in computer science stands for?

A Abstract Service Provider

B Application Service Provider

C Application Signal Provider

D Abstract Syntax Provider

Answer: B

Question 59

Giddha is a folk dance of which state?

- A Rajasthan
- B Uttar Pradesh
- C Punjab
- D Bihar

Answer: C

Question 60

A manufacturer faces price elasticity of demand of a 1.25 for its product. If it lowers its price by 6.4%, the increase in quantity sold will be

- A 5.15 percent
- B 7.65 percent
- C 8 percent
- D 5.12 percent

Answer: C

Question 61

If Money supply growth is faster than real GDP growth, it results in

- A Inflation
- B deflation
- C budget surplus
- D budget deficit

Answer: A

Question 62

Algae belongs to which of the following levels of the ecosystem?

- A Decomposers
- B Destructors
- C Producers
- D Consumers

Answer: C

Question 63

Which park also shares its boundaries with Bangladesh?

- A Sundarbans National Park
- B Kaziranga National Park
- C Kanchendzonga National Park
- D Panna National Park

Answer: A

Question 64

ATM stands for

- A Any Time Money
- B Auto Technology Money
- C Automated Teller Machine
- D Automatic Transaction Machinery

Answer: C

Question 65

In terms of size, Neptune ranks no. in our Solar System.

- A 1
- B 2
- C 3

D 4

Answer: D

Question 66

Abu Dhabi is the Capital City of

A United Arab Emirates

B Netherlands

C South Korea

D Italy

Answer: A

Question 67

In Akbar's regime,was the military head.

A Sultan Ahmed Fawad

B Suri Moja

C Mir Khaas

D Mir Bakshi

Answer: D

Question 68

Who pioneered the guerrilla warfare methods?

A Babur

B Akbar

C Shivaji

D Bajirao Peshwa

Answer: C

Question 69

Who Invented Universal Standard Time?

- A Enrico Fermi
- B Adolf Gaston Eugen Fick
- C Sandford Fleming
- D Benoit Fourneyron

Answer: C

Question 70

.....states that the total current entering a junction is equal to the total current leaving the junction.

- A Lenz's Law
- B Hooke's Law
- C Ohm's Law
- D Kirchhoff's First Law

Answer: D

Question 71

Acceleration due to gravity on a planet decreases with

- A decrease in radius of the planet
- B increase in mass of the planet
- C decrease in mass of the body
- D increase in altitude from surface of the planet

Answer: D

Question 72

Who is the Chairman of NITI Aayog?

- A President

- B** RBI Governor
- C** Finance Secretary
- D** Prime Minister

Answer: D

Question 73

Who is the Chairman of the Rajya Sabha?

- A** President of India
- B** Prime Minister of India
- C** Vice President of India
- D** Speaker of Lok Sabha

Answer: C

Question 74

Shiva Thapa is related to

- A** Badminton
- B** Lawn tennis
- C** Boxing
- D** Cricket

Answer: C

Question 75

Who is the author of the book "My Truth".

- A** Khuswant Singh
- B** Kiran Bedi
- C** Narendra Modi
- D** Indira Gandhi

Answer: D

Mathematics

Instructions

For the following questions answer them individually

Question 76

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

A 6 days

B 3 days

C 18 days

D 1.5 days

Answer: B

Explanation:

Let total work to be done = 12 units

P can complete the work alone in 12 days

$$\Rightarrow \text{P's efficiency} = \frac{12}{12} = 1 \text{ unit/day}$$

Q can complete the work alone in 12 days

$$\Rightarrow \text{Q's efficiency} = \frac{12}{12} = 1 \text{ unit/day}$$

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

$$\Rightarrow 50\% \text{ of the work} = \frac{50}{100} \times 12 = 6 \text{ units}$$

$$\therefore \text{Time taken by them together to complete 50\% of the work} = \frac{6}{2} = 3 \text{ days}$$

\Rightarrow Ans - (B)

Question 77

If $4(x + 5) - 3 > 6 - 4x \geq x - 5$; then the value of x is

A -2

B 1

C 3

D 4

Answer: B

Explanation:

Expression 1 : $4(x + 5) - 3 > 6 - 4x$

$$\Rightarrow 4x + 20 - 3 > 6 - 4x$$

$$\Rightarrow 4x + 4x > 6 - 17$$

$$\Rightarrow 8x > -11$$

$$\Rightarrow x > \frac{-11}{8} \text{ -----(i)}$$

Expression 2 : $6 - 4x \geq x - 5$

$$\Rightarrow x + 4x \leq 6 + 5$$

$$\Rightarrow 5x \leq 11$$

$$\Rightarrow x \leq \frac{11}{5} \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $\frac{-11}{8} < x \leq \frac{11}{5}$

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

\Rightarrow Ans - (B)

Question 78

The point R(a,b) is first reflected in origin to R1 and R1 is reflected in x-axis to (4,2). The coordinates of point R are

A (4,2)

B (4,-2)

C (-4,2)

D (-4,-2)

Answer: C

Explanation:

R(a,b) after reflection at the origin = (-a,-b)

Reflection of point (-a,-b) in the x-axis is (-a,b)

According to ques,

$$\Rightarrow (-a, b) = (4, 2)$$

$$\Rightarrow a = -4 \text{ and } b = 2$$

\therefore Coordinates of Point R = (-4,2)

=> Ans - (C)

Question 79

For triangle PQR, find equation of altitude PS if coordinates of P, Q and R are (1,2), (2,1) and (0,5) respectively?

A $x - 3y = 7$

B $x + 3y = 5$

C $x - 2y = -3$

D $x + 3y = 7$

Answer: C

Explanation:

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

$$\text{Slope of QR} = \frac{5-1}{0-2} = \frac{4}{-2} = -2$$

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

Let slope of PS = m

$$\Rightarrow m \times (-2) = -1$$

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

Now, equation of PS having slope, $m = \frac{1}{2}$ and passing through P(1,2)

$$\Rightarrow (y - 2) = \frac{1}{2}(x - 1)$$

$$\Rightarrow 2y - 4 = x - 1$$

$$\Rightarrow x - 2y = -4 + 1 = -3$$

=> Ans - (C)

Question 80

If $\sec 300^\circ = x$, then value of x is

A $\sqrt{2}$

B $1/\sqrt{3}$

C 2

D 1

Answer: C

Explanation:

Expression : $\sec 300^\circ = x$

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

$$= \sec(60)$$

$$= 2$$

=> Ans - (C)

Question 81

To cover a distance of 225 km in 2.5 hours what should be the average speed of the car in meters/second?

A 90 m/s

B 45 m/s

C 50 m/s

D 25 m/s

Answer: D

Explanation:

The car covers 225 km in 2.5 hours

$$\text{Speed of car (in km/h)} = \frac{225}{2.5} = 90 \text{ km/hr}$$

$$\Rightarrow \text{Speed of car (in m/s)} = 90 \times \frac{5}{18}$$

$$= 5 \times 5 = 25 \text{ m/s}$$

=> Ans - (D)

Question 82

An angle is greater than its complementary angle by 30° . Find the measure of the angle?

A 30°

B 90°

C 60°

D 120°

Answer: C

Explanation:

Let the angle = θ

Its complementary angle = $(\theta - 30^\circ)$

Sum of an angle and its complementary angle = 90°

$$\Rightarrow \theta + (\theta - 30^\circ) = 90^\circ$$

$$\Rightarrow 2\theta = 90^\circ + 30^\circ = 120^\circ$$

$$\Rightarrow \theta = \frac{120}{2} = 60^\circ$$

\Rightarrow Ans - (C)

Question 83

A rice trader buys 8 quintals of rice for Rs 3,600. 10% rice is lost in transportation. At what rate should he sell to earn 15% profit?

A Rs 352.1 per quintal

B Rs 517.5 per quintal

C Rs 575 per quintal

D Rs 582.3 per quintal

Answer: C

Explanation:

Cost price = Rs. 3600 for 8 quintals

Quantity of rice with the trader after transportation lost = $\frac{100-10}{100} \times 8$

$$= \frac{36}{5} = 7.2 \text{ quintals}$$

To have 15% profit, total selling price of the trader should be = $\frac{115}{100} \times 3600$

= Rs. 4140

$$\therefore \text{Selling price per quintal} = \frac{4140}{7.2} = \text{Rs } 575$$

\Rightarrow Ans - (C)

Question 84

What is the value of $(\frac{3}{5} + \frac{7}{9})$?

A $\frac{62}{45}$

B $\frac{31}{28}$

C $\frac{5}{7}$

D $\frac{1}{7}$

Answer: A

Explanation:

$$\text{Expression : } \frac{3}{5} + \frac{7}{9}$$

$$= \frac{3(9)+7(5)}{45}$$

$$= \frac{27+35}{45} = \frac{62}{45}$$

=> Ans - (A)

Question 85

Marked price of an item is Rs 200. On purchase of 1 item discount is 5%, on purchase of 2 items discount is 14%. Rajeshri buys 3 items, what is the effective discount?

- A 37 percent
- B 26.25 percent
- C 11 percent
- D 30.2 percent

Answer: C

Explanation:

Marked price of item = Rs. 200

$$\text{Amount saved on buying 1 item} = \frac{5}{100} \times 200 = \text{Rs.}10$$

$$\text{Marked price of 2 items} = 2 \times 200 = \text{Rs.} 400$$

$$\text{Amount saved on buying 2 items} = \frac{14}{100} \times 400 = \text{Rs.}56$$

$$\text{Thus, on buying 3 items, total amount saved} = 10 + 56 = \text{Rs.} 66$$

$$\text{Total marked price of 3 items} = 3 \times 200 = \text{Rs.} 600$$

$$\therefore \text{Effective discount} = \frac{66}{600} \times 100$$

$$= \frac{66}{6} = 11\%$$

=> Ans - (C)

Question 86

If the radius of a circle is increased by 16%, its area increases by

- A 34.56 percent
- B 32 percent
- C 16 percent

D 17.28 percent

Answer: A

Explanation:

Let radius = 10 cm

$$\Rightarrow \text{Area of circle} = \pi(10)^2 = 100\pi \text{ sq. cm}$$

If radius is increased by 16%, \Rightarrow New radius = 11.6 cm

$$\text{New area} = \pi(11.6)^2 = 134.56\pi \text{ sq. cm}$$

$$\Rightarrow \% \text{ increase in area} = \frac{134.56 - 100}{100} \times 100$$

$$= 34.56\%$$

\Rightarrow Ans - (A)

Question 87

Expand and simplify $(x + 4)^2 + (x - 2)^2$

A $2(x^2 + 2x + 10)$

B $2(x^2 + 2x - 10)$

C $2(x^2 - 2x + 10)$

D $2(x^2 - 2x - 10)$

Answer: A

Explanation:

$$\text{Expression : } (x + 4)^2 + (x - 2)^2$$

$$= (x^2 + 16 + 8x) + (x^2 + 4 - 4x)$$

$$= 2x^2 + 4x + 20$$

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

\Rightarrow Ans - (A)

Question 88

A cone is hollowed out of a solid wooden cube of side 6 cm. The diameter and height of the cone is same as the side of the cube. What is the volume of the remaining cube?

A 159.42 cubic cms

B 323.15 cubic cms

C 106.33 cubic cms

D 210.66 cubic cms

Answer: A

Explanation:

Side of cube = 6 cm

Height of cone = 6 cm and radius of cone = $\frac{6}{2} = 3$ cm

Volume of remaining cube = Volume of cube - Volume of cone

$$= (a)^3 - \frac{1}{3}\pi r^2 h$$

$$= (6)^3 - \left[\frac{1}{3} \times \frac{22}{7} \times (3)^2 \times 6\right]$$

$$= 216 - \left(\frac{22 \times 18}{7}\right)$$

$$= 216 - 56.58$$

$$= 159.42 \text{ cm}^3$$

=> Ans - (A)

Question 89

In $\triangle ABC$, the median AD is 7 cm and BC is 14 cm, measure of $\angle CAB$ is

A 30°

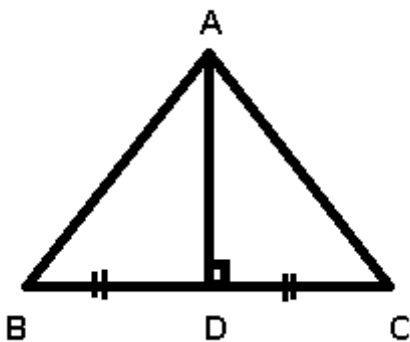
B 60°

C 90°

D 120°

Answer: C

Explanation:



AD = 7 cm and BC = 14 cm

Since, AD is the median, => BD = DC = 7 cm

In $\triangle ADC$, => AD = DC = 7 cm

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

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

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

\Rightarrow Ans - (C)

Question 90

Among three numbers, the first is twice the second and thrice the third. If the average of three numbers is 198, then what is the difference between the first and the third number?

A 216

B 297

C 661

D 431

Answer: A

Explanation:

Let the first number be $6x$

\Rightarrow Second number = $3x$ and third number = $2x$

$$\text{Average of the three numbers} = \frac{6x+3x+2x}{3} = 198$$

$$\Rightarrow 11x = 198 \times 3 = 594$$

$$\Rightarrow x = \frac{594}{11} = 54$$

$$\therefore \text{Difference between the first and the third number} = 6x - 2x = 4x$$

$$= 4 \times 54 = 216$$

\Rightarrow Ans - (A)

Question 91

If $\sec A / \sqrt{\sec^2 A - 1} = x$, then value of x is

A $\tan A$

B $\operatorname{cosec} A$

C $\sin A$

D $\cos A$

Answer: B

Explanation:

$$\text{Expression: } \frac{\sec A}{\sqrt{\sec^2 A - 1}}$$

$$\therefore (\sec^2 A - \tan^2 A = 1)$$

$$\begin{aligned}
&= \frac{\sec A}{\sqrt{\tan^2 A}} = \frac{\sec A}{\tan A} \\
&= \left(\frac{1}{\cos A}\right) \div \left(\frac{\sin A}{\cos A}\right) \\
&= \left(\frac{1}{\cos A}\right) \times \left(\frac{\cos A}{\sin A}\right) \\
&= \frac{1}{\sin A} = \operatorname{cosec} A
\end{aligned}$$

=> Ans - (B)

Question 92

If Gangadhar's salary is 3/11 times of Hari's and Shambhu's is 3/4 times of Hari's, what is the ratio of Gangadhar's salary to Shambhu's?

- A 44:9
- B 4:11
- C 9:44
- D 11:4

Answer: B

Explanation:

Let Hari's salary = $44x$

$$\Rightarrow \text{Gangadhar's salary} = \frac{3}{11} \times 44x = 12x$$

$$\Rightarrow \text{Shambhu's salary} = \frac{3}{4} \times 44x = 33x$$

$$\therefore \text{Ratio of Gangadhar's salary to Shambhu's} = \frac{12x}{33x}$$

$$= 4 : 11$$

=> Ans - (B)

Question 93

If $a+b = 8$ and $ab = 15$, then $a^3 + b^3$ is

- A 224
- B 244
- C 152
- D 128

Answer: C

Explanation:

It is given that : $(a + b) = 8$ and $ab = 15$

$$\begin{aligned} \text{Using the expression, } (a^3 + b^3) &= (a + b)(a^2 + b^2 - ab) \\ &= (8)(a^2 + b^2 - 15) \end{aligned}$$

$$\text{Also, } (a^2 + b^2) = (a + b)^2 - 2ab$$

$$= 8[(a + b)^2 - 2ab] - 15]$$

$$= 8[(8^2 - (2 \times 15)) - 15]$$

$$= 8(64 - 30 - 15) = 8 \times 19$$

$$= 152$$

=> Ans - (C)

Question 94

What is the value of $(1 + \cot A)^2 + (1 - \cot A)^2$?

A $2\operatorname{cosec}^2 A$

B $2\sec^2 A$

C $1 - 2\operatorname{cosec}^2 A$

D $1 - 2\sec^2 A$

Answer: A

Explanation:

$$\text{Expression : } (1 + \cot A)^2 + (1 - \cot A)^2$$

$$= (1 + \cot^2 A + 2\cot A) + (1 + \cot^2 A - 2\cot A)$$

$$= 2 + 2\cot^2 A = 2(1 + \cot^2 A)$$

$$\because (\operatorname{cosec}^2 A - \cot^2 A = 1)$$

$$= 2\operatorname{cosec}^2 A$$

=> Ans - (A)

Question 95

The sum of twice a number and thrice its reciprocal is $25/2$. What is the number?

A 7

B 6

C 5

D 4

Answer: B

Explanation:

Let the number be x

$$\text{According to ques, } \Rightarrow 2x + \frac{3}{x} = \frac{25}{2}$$

$$\Rightarrow \frac{2x^2+3}{x} = \frac{25}{2}$$

$$\Rightarrow 4x^2 + 6 = 25x$$

$$\Rightarrow 4x^2 - 25x + 6 = 0$$

$$\Rightarrow 4x^2 - 24x - x + 6 = 0$$

$$\Rightarrow 4x(x - 6) - 1(x - 6) = 0$$

$$\Rightarrow (4x - 1)(x - 6) = 0$$

$$\Rightarrow x = 6, \frac{1}{4}$$

\Rightarrow Ans - (B)

Question 96

A sum fetched a total simple interest of Rs. 7728 at the rate of 7% per year in 8 years. What is the sum?

A Rs 13800

B Rs 16560

C Rs 11040

D Rs 8280

Answer: A

Explanation:

Let the sum = Rs. $100x$

Rate = 7% under simple interest and time = 8 years

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

$$\Rightarrow \frac{100x \times 7 \times 8}{100} = 7728$$

$$\Rightarrow 56x = 7728$$

$$\Rightarrow x = \frac{7728}{56} = 138$$

$$\therefore \text{Sum} = 100 \times 138 = \text{Rs } 13,800$$

\Rightarrow Ans - (A)

Question 97

Refer the below data table and the following question.

	Number of Employees	Annual Salary	Bonus as percent of annual salary
Manager	3	60	30%
Executive	6	12	30%
Trainee	4	40	20%

What is the average bonus in rupees ?

- A 827692
- B 7880002
- C 253333
- D 224000

Answer: A

Explanation:

Total bonus of managers (in lakh) = $3 \times 60 \times \frac{30}{100} = 54$ lakhs

Total bonus of executive (in lakh) = $6 \times 12 \times \frac{30}{100} = 21.6$ lakhs

Total bonus of trainee (in lakh) = $4 \times 40 \times \frac{20}{100} = 32$ lakhs

=> Average bonus in rupees = $\frac{(54+21.6+32)}{(3+6+4)}$

= $\frac{107.6}{13} = 8.27692$ lakhs = 8,27,692

=> Ans - (A)

Question 98

Refer the below data table and the following question.

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

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

- A 2011 & 2013
- B 2013 & 2015

C 2011 & 2015

D 2014 & 2015

Answer: C

Explanation:

Total exports from the three companies together in :

$$2011 = 3000 + 5000 + 3000 = 11000$$

$$2012 = 3000 + 4000 + 5000 = 12000$$

$$2013 = 1000 + 2000 + 3000 = 6000$$

$$2014 = 2000 + 3000 + 4000 = 9000$$

$$2015 = 2000 + 4000 + 5000 = 11000$$

Clearly, total exports in 2011 and 2015 are equal to 11000

=> Ans - (C)

Question 99

Refer the below data table and the following question.

Year	Profit or Loss
2011	5
2012	15
2013	-20
2014	-15
2015	-5

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

A Profit of Rs 20 crores

B Loss of Rs 30 crores

C Loss of Rs 20 crores

D Profit of Rs 30 crores

Answer: C

Explanation:

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

$$= 5 + 15 - 20 - 15 - 5$$

$$= -20$$

Since, it is negative, thus loss of Rs. 20 crore

=> Ans - (C)

Question 100

Refer the below data table and the following question.

India's Exports in 2015	Value in millions US\$
Jewellery	550
Software	700
Cotton	875
Steel	775
Electronics	550

Software was what percent of total exports ?

- A 20.29 percent
- B 22.79 percent
- C 25.29 percent
- D 17.79 percent

Answer: A

Explanation:

Value in millions of Software = 700

Total exports = 550 + 700 + 875 + 775 + 550 = 3450

$$\Rightarrow \% \text{ of Software in total exports} = \frac{700}{3450} \times 100$$

$$= \frac{1400}{69} = 20.289 \approx 20.29\%$$

\Rightarrow Ans - (A)