

SSC CHSL 7 Jan 2017 Morning Shift

Reasoning

Instructions

For the following questions answer them individually

Question 1

Select the related word/letters/number from the given alternatives. Hirakund : Mahanadi :: Tehri Dam : ?

- A Damodar
- B Bhagirathi
- C Yamuna
- D Son

Answer: B

Explanation:

Hirakund Dam is built across the Mahanadi river, similarly Tehri Dam is built across *Bhagirathi* river.

=> Ans - (B)

Question 2

Select the related word/letters/number from the given alternatives. LG : WM :: DC : ?

- A IJ
- B EF
- C GE
- D LI

Answer: C

Explanation:

Expression = LG : WM :: DC : ?

The pattern followed is that when we assign numerical value to the alphabets, we get :

$$L(12) \equiv 12 \times 2 - 1 = 23 \equiv W$$

$$G(7) \equiv 7 \times 2 - 1 = 13 \equiv M$$

$$\text{Similarly, } D(4) \equiv 4 \times 2 - 1 = 7 \equiv G$$

$$C(3) \equiv 3 \times 2 - 1 = 5 \equiv E$$

=> DC : **GE**

=> Ans - (C)

Question 3

Select the related word/letters/number from the given alternatives. IM : RZ :: HF : ?

A MP

B OK

C PL

D QR

Answer: C

Explanation:

Expression = IM : RZ :: HF : ?

The pattern followed is that when we assign numerical value to the alphabets, we get :

$$I(9) \equiv 9 \times 2 = 18 \equiv R$$

$$M(13) \equiv 13 \times 2 = 26 \equiv Z$$

$$\text{Similarly, } H(8) \equiv 8 \times 2 = 16 \equiv P$$

$$F(6) \equiv 6 \times 2 = 12 \equiv L$$

=> HF : **PL**

=> Ans - (C)

Question 4

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

16 : 40 :: 20 : ?

A 29

B 21

C 50

D 60

Answer: C

Explanation:

Expression = 16 : 40 :: 20 : ?

The pattern followed is = $x : 2.5x$

$$\text{Eg :- } 16 : 16 \times 2.5 = 16 : 40$$

Similarly, $20 \times 2.5 = 50$

=> Ans - (C)

Question 5

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

A Mohammad Azharuddin

B Sunil Gavaskar

C Dhyan Chand

D Yuvraj Singh

Answer: C

Explanation:

Mohammad Azharuddin, Sunil Gavaskar and Yuvraj Singh are all cricketers, while Dhyan Chand played hockey, hence he is the odd one out.

=> Ans - (C)

Question 6

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

A EV

B GT

C JQ

D MO

Answer: D

Explanation:

Each pair of words represent letters which are at the same position when counted from reverse alphabetical order.

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

E -> V

G -> T

J -> Q

M -> N

=> Ans - (D)

Question 7

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

A 4246

B 8314

C 9546

D 7284

Answer: B

Explanation:

The pattern followed is that the product of first and last digit is equal to the middle digits, but $8 \times 4 \neq 31$, hence 8314 is the odd one out.

=> Ans - (B)

Question 8

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

A 78, 26

B 19, 20

C 20, 40

D 36, 12

Answer: B

Explanation:

Of the given pair of numbers, only (19,20) are co-prime which have no other common factors than 1, hence (19,20) is the odd one out.

=> Ans - (B)

Question 9

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. Constable, Head constable, ? , Inspector

A Deputy Superintendent of Police

- B Superintendent of Police
- C Sub-inspector
- D Assistant Commissioner of Police

Answer: C

Explanation:

The given series is of successive order of posts in police departments.

= Constable -> Head constable -> Sub-inspector -> Inspector

=> Ans - (C)

Question 10

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

3, 6, 9, 36, 41, ?

- A 244
- B 225
- C 246
- D 410

Answer: C

Explanation:

The pattern followed is :

$$3 \times 2 = 6$$

$$6 + 3 = 9$$

$$9 \times 4 = 36$$

$$36 + 5 = 41$$

$$41 \times 6 = \mathbf{246}$$

=> Ans - (C)

Question 11

In the following question, two statements are given each followed by two conclusions I and II. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

Statements:

(I) Some scooters are trucks.

(II) All trucks are trains.

Conclusion:

(I) Some scooters are trains.

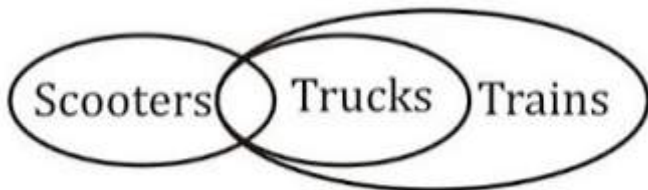
(II) No truck is a scooter.

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

Answer: A

Explanation:

The venn diagram for above statements is :



Conclusion:

(I) Some scooters are trains = true

(II) No truck is a scooter = false

Thus, only conclusion I follows.

=> Ans - (A)

Question 12

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. JLN, RTV, ZBD, ?

- A SUW
- B HJL
- C GHI
- D TVX

Answer: B

Explanation:

Expression : JLN, RTV, ZBD, ?

The pattern followed is :



Thus, missing term = HJL

=> Ans - (B)

Question 13

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. XV, BA, JK, ?

- A MP
- B VS
- C VZ
- D UD

Answer: C

Explanation:

Expression : XV, BA, JK, ?

The pattern followed in each letter of the terms is :

1st letter : X (+4 letters) = B (+8 letters) = J (+12 letters) = V

2nd letter : V (+5 letters) = A (+10 letters) = K (+15 letters) = Z

Thus, missing term = VZ

=> Ans - (C)

Question 14

If yesterday was Tuesday, then what day of the week will the tenth day from today be?

- A Friday
- B Sunday
- C Monday
- D Saturday

Answer: D

Explanation:

If yesterday was Tuesday, then today is = Wednesday

Also, 7th day from today is = Wednesday

Now, 10th day = Wednesday (+3) = Saturday

=> Ans - (D)

Question 15

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

i. Collaborate

ii. Constant

iii. Correspondence

iv. Combination

A iv, ii, i, iii

B iii, ii, iv, i

C iv, iii, i, ii

D i, iv, ii, iii

Answer: D

Explanation:

As per the order of dictionary :

= Collaborate -> Combination -> Constant -> Correspondence

≡ i, iv, ii, iii

=> Ans - (D)

Question 16

In a certain code language, 'TAPERRECORDER' is written as '!#&@^@?%^+@^'. How is 'REPORT' written in that code language?

A ^@&^%!

B ^@&%!

C ^@&%^!

D ^@%&^!

Answer: C

Explanation:

The codes for each letter is given :

R -> ^

E -> @

P -> &

O -> %

R -> ^

T -> !

Thus, REPORT : ^@&%^!

=> Ans - (C)

Question 17

In the following questions select the missing number from the given series.

13	169	961
15	?	2601
12	144	441

A 81

B 361

C 289

D 225

Answer: D

Explanation:

In each row, the number in the middle is the square of the first number.

Eg :- $13^2 = 169$ and $12^2 = 144$

Similarly, $15^2 = 225$

=> Ans - (D)

Question 18

If "*" denotes "added to", "&" denotes "divided by", "@" denotes "multiplied by" and "%" denotes "subtracted from", then $153 \& 17 @ 6 \% 9 * 18 = ?$

A 63

B 98

C 93

D 10

Answer: A

Explanation:

Expression = $153 \& 17 @ 6 \% 9 * 18 = ?$

$$\equiv 153 \div 17 \times 6 - 9 + 18$$

$$= (9 \times 6) + 9$$

$$= 54 + 9 = 63$$

=> Ans - (A)

Question 19

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

d_fde_ _deee_

A eeff

B cdef

C ddee

D deee

Answer: A

Explanation:

The pattern followed is that, the term 'def' is repeated and number of e's is also increased in each term.

= def deef deeef

=> Ans - (A)

Question 20

A man travels 25 km towards the west and then turns 90° to his left and travels another 4 km. Finally, he turns left and covers 25 km. In which direction is he now from his original position?

A West

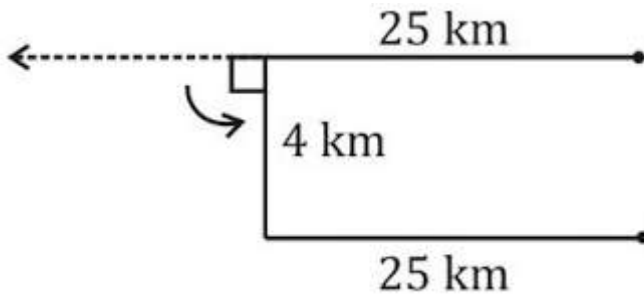
B East

C South

D North

Answer: C

Explanation:



The man travels 25 km towards the west and then turns 90° to his left and travels another 4 km towards south direction. Finally, he turns left and travels east to cover 25 km.

Thus, he is in south direction from his original position.

=> Ans - (C)

Question 21

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix I are numbered from 0 to 4 and that of Matrix II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example, 'N' can be represented by 21, 67 etc. and 'W' can be represented by 66, 57 etc. Similarly, you have to identify the set for the word 'HUNT'.

Matrix - I

	0	1	2	3	4
0	T	R	A	N	B
1	W	U	N	H	U
2	E	N	S	G	U
3	N	Y	P	U	M
4	H	T	U	F	A

Matrix - II

	5	6	7	8	9
5	T	A	R	I	H
6	X	R	N	W	B
7	C	S	Y	E	U
8	S	N	T	M	S
9	G	B	E	R	H

A 40, 33, 03, 88

B 99, 23, 56, 00

C 59, 42, 12, 79

D 13, 11, 30, 41

Answer: D

Explanation:

(A) : 40, 33, 03, 88 = HUNM

(B) : 99, 23, 56, 00 = HGAT

(C) : 59, 42, 12, 79 = HUNU

(D) : 13, 11, 30, 41 = **HUNT**

=> Ans - (D)

Question 22

Introducing a girl, a man says, "She is the daughter of the daughter of my wife". How is man related to the girl?

- A Maternal uncle
- B Son
- C Maternal grandfather
- D Father

Answer: C

Explanation:

Daughter of man's wife = Man's daughter

Now, the girl is daughter of man's daughter, => The girl is his granddaughter.

Thus, the man is the maternal grandfather of the girl.

=> Ans - (C)

Question 23

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

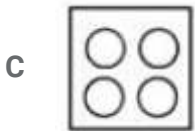
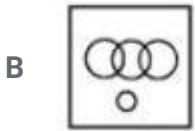




Answer: D

Question 24

Identify the diagram that best represents the relationship among the given classes. Olympic games, Tennis, Wrestling, Ludo

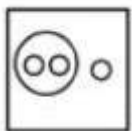


Answer: A

Explanation:

Tennis and wrestling are both Olympic games but Ludo is not an Olympic game. Hence will not intersect anyone.

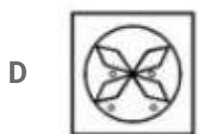
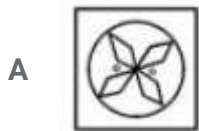
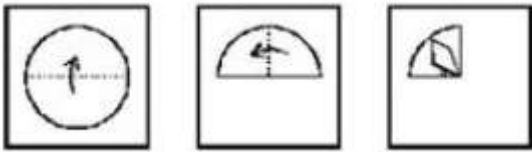
Thus, the venn diagram that best describes above relationship is :



=> Ans - (A)

Question 25

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



Answer: C

General Awareness

Instructions

For the following questions answer them individually

Question 26

Group of 4 bits forms a

- A Byte
- B Nibble
- C Gigabyte
- D Terabyte

Answer: B

Question 27

Barograph was invented by

- A Lucien Vidi
- B John Venn
- C Theophilus Van Kannel
- D Lewis Urry

Answer: A

Question 28

Diabetes is caused by

- A Excess of insulin
- B Low production of Insulin
- C Malfunction of liver
- D Higher production of bilirubin

Answer: B

Question 29

Tectona grandis Linn is the scientific name of

- A Guava
- B Teak
- C Amla
- D Chiku

Answer: B

Question 30

Sea-Anemones belongs to the phylum

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

Answer: B

Question 31

Which among the following is present inside the nucleus of an atom?

- A Protons and Neutrons
- B Electrons and Protons
- C Neutrons and Electrons
- D Neutrons, Protons, Electrons

Answer: A

Question 32

What is baking soda?

- A Aluminium bicarbonate
- B Sodium isolate
- C Sodium bicarbonate
- D Aluminium sulphate

Answer: C

Question 33

Elephanta Caves is in

- A Maharashtra

- B Orissa
- C Rajasthan
- D Sikkim

Answer: A

Question 34

Which of the following is a classical dance from North India?

- A Bharatanatyam
- B Kuchipudi
- C Kathak
- D Kathakali

Answer: C

Question 35

If demand curve for camping tents is $D = 100000 - 17P$ and supply curve is $S = 50000 + 8P$, find the equilibrium Price?

- A Rs. 1000
- B Rs. 2000
- C Rs. 4000
- D Rs. 500

Answer: B

Question 36

Value of Total Goods and Services produced in a country is its

- A Gross Domestic Product
- B Gross Revenue Income
- C Total Goods Revenue
- D Total Income

Answer: A

Question 37

Dissolved oxygen in rivers is close toparts per million.

- A** 125
- B** 25
- C** 5
- D** 0

Answer: C

Question 38

Which of the following is also known as a Common Water Hyacinth?

- A** Pistia
- B** Opuntia
- C** Aegilops
- D** Eichhornia

Answer: D

Question 39

Rukmini Devi Arundale is associated with

- A** Kathak
- B** Bharatnatyam
- C** Kuchipudi
- D** Bhangra

Answer: B

Question 40

Which state does not share a common border with Haryana?

- A Uttar Pradesh
- B Madhya Pradesh
- C Himachal Pradesh
- D Rajasthan

Answer: B

Question 41

Which planet is also referred to as a "Dwarf planet"?

- A Pluto
- B Mercury
- C Jupiter
- D Saturn

Answer: A

Question 42

Who was the founder of the Brahmo Samaj, founded in 1828?

- A Rabindranath Tagore
- B Subhash Chandra Bose
- C Sardar Vallabh Bhai Patel
- D Raja Ram Mohan Roy

Answer: D

Question 43

Shah Jahan built Taj Mahal in memory of

- A Ruqayya Sultan Begum
- B Jodha Bai
- C Mumtaz Mahal

D Nur Jahan

Answer: C

Question 44

Which actor won the best actor award in the 1st Filmfare Awards?

A Dev Anand

B Rajesh Khanna

C Dilip Kumar

D Amitabh Bachchan

Answer: C

Question 45

Which of the following physical quantities is a scalar quantity?

A Weight

B Impulse

C Young's Modulus

D acceleration

Answer: C

Question 46

Which among the following elements is a liquid at room temperature?

A Phosphorus

B Mercury

C Sodium

D Aluminium

Answer: B

Question 47

How many maximum terms, a person can serve as Prime Minister of India?

- A** 3
- B** 5
- C** 7
- D** No limit

Answer: D

Question 48

If the president declares emergency then this proclamation must be approved by the Parliament within

- A** 1 year
- B** 6 months
- C** 3 months
- D** one month

Answer: D

Question 49

Deepika Kumari is associated with

- A** Archery
- B** Wrestling
- C** Boxing
- D** Swimming

Answer: A

Question 50

The Arthashastra was written by

- A Chanakya
- B Kalidasa
- C Harsha Vardhana
- D Vatsyayana

Answer: A

Mathematics

Instructions

For the following questions answer them individually

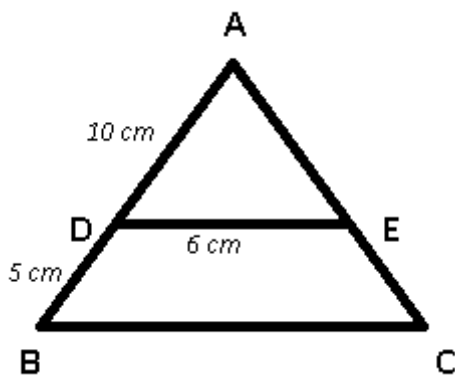
Question 51

In $\triangle ABC$, D and E are points on side AB and AC respectively. DE is parallel to BC. If lengths of AD, DB and DE are 10 cm, 5 cm and 6 cm respectively. What is the length of BC?

- A 9 cm
- B 2 cm
- C 3 cm
- D 11 cm

Answer: A

Explanation:



DE is parallel to BC

$$\Rightarrow \frac{AD}{AB} = \frac{DE}{BC}$$

$$\Rightarrow \frac{10}{10+5} = \frac{6}{BC}$$

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

$$\Rightarrow BC = 3 \times 3 = 9 \text{ cm}$$

\Rightarrow Ans - (A)

Question 52

If $2x - 1 < 5x + 2$ and $2x + 5 < 6 - 3x$, then x can take which of the following values?

A 1

B 0

C 2

D -2

Answer: B

Explanation:

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

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

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

Expression 2 : $2x + 5 < 6 - 3x$

$$\Rightarrow 2x + 3x < 6 - 5 \Rightarrow 5x < 1$$

$$\Rightarrow x < \frac{1}{5} \text{ -----(ii)}$$

Combining equations (i) and (ii), we get : $-1 < x < \frac{1}{5}$

Thus, the only possible value that x can take = 0

\Rightarrow Ans - (B)

Question 53

A carpenter can build a cupboard in 60 hours. After 15 hours he takes a break. What fraction of the cupboard is yet to be built?

A 0.5

B 0.9

C 0.75

D 0.25

Answer: C

Explanation:

Time taken to build the cupboard = 60 hours

Time spent = 15 hours

$$\Rightarrow \text{Fraction of the cupboard yet to be built} = \frac{(60-15)}{60} = \frac{45}{60}$$

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

\Rightarrow Ans - (C)

Question 54

There is 75% increase in an amount in 5 years at simple interest. What will be the compound interest of Rs 40000 after 2 years at the same rate?

A Rs 25800

B Rs 32250

C Rs 12900

D Rs 19350

Answer: C

Explanation:

Let the rate of interest = $r\%$

Let sum invested under simple interest = Rs. $100x$ and time period = 5 years

$$\Rightarrow \text{Interest earned} = \frac{75}{100} \times 100x = Rs.75x$$

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

$$\Rightarrow \frac{100x \times r \times 5}{100} = 75x$$

$$\Rightarrow r = \frac{75}{5} = 15\%$$

Sum invested under compound interest = Rs. 40,000 and time period = 2 years

$$\Rightarrow \text{Compound interest} = P \left[\left(1 + \frac{R}{100} \right)^T - 1 \right]$$

$$= 40,000 \left[\left(1 + \frac{15}{100} \right)^2 - 1 \right]$$

$$= 40,000 \left[\left(\frac{23}{20} \right)^2 - 1 \right] = 40,000 \left(\frac{529-400}{400} \right)$$

$$= 100 \times 129 = Rs.12,900$$

Question 55

Which of the following equations has the sum of its roots as 5?

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

B $x^2 - 6x - 5 = 0$

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

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

Answer: A

Explanation:

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

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

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

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

=> Sum of roots = $-\frac{-6}{1} = 6$

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

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

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

=> Sum of roots = $-\frac{6}{1} = -6$

=> Ans - (A)

Question 56

The base angle of an isosceles trapezium is 45° . If the shorter side and both the equal sides are 10 cm each, what is the area of the trapezium?

A $50\sqrt{2} + 50$ sq cm

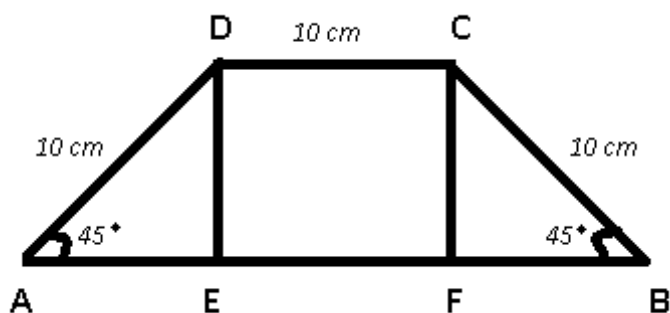
B $50\sqrt{2} + 100$ sq cm

C $100\sqrt{2} + 50$ sq cm

D $100\sqrt{2} + 100$ sq cm

Answer: A

Explanation:



In $\triangle ADE$, $\cos 45 = \frac{AE}{AD}$

$$\Rightarrow \frac{1}{\sqrt{2}} = \frac{AE}{10}$$

$$\Rightarrow AE = \frac{10}{\sqrt{2}} = 5\sqrt{2}$$

Similarly, $BF = 5\sqrt{2}$

Also, in $\triangle ADE$, $\sin 45 = \frac{DE}{AD}$

$$\Rightarrow \frac{1}{\sqrt{2}} = \frac{DE}{10}$$

$$\Rightarrow DE = \frac{10}{\sqrt{2}} = 5\sqrt{2}$$

$$\Rightarrow AB = AE + EF + BF = 5\sqrt{2} + 10 + 5\sqrt{2} = 10 + 10\sqrt{2}$$

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

$$= \frac{1}{2} \times (CD + AB) \times DE$$

$$= \frac{1}{2} \times (10 + 10 + 10\sqrt{2}) \times (5\sqrt{2})$$

$$= (10 + 5\sqrt{2}) \times 5\sqrt{2}$$

$$= 50\sqrt{2} + 50 \text{ sq. cm}$$

Question 57

Rahul sells a machine for Rs 50 lakhs at a loss. Had he sold it for Rs 60 lakh, his gain would have been 7 times the earlier loss. What is the cost price of the machine?

A Rs 51.25 lakhs

B Rs 58.75 lakhs

C Rs 67.14 lakhs

D Rs 43.75 lakhs

Answer: A

Explanation:

Let cost price of the machine = Rs. x lakhs

When selling price = Rs. 50 lakhs

$$\Rightarrow \text{Loss} = \text{Rs. } (x - 50) \text{ lakhs}$$

If selling price = Rs. 60 lakhs

$$\Rightarrow \text{Profit} = \text{Rs. } (60 - x) \text{ lakhs}$$

According to ques, Profit = $7 \times$ loss

$$\Rightarrow (60 - x) = 7 \times (x - 50)$$

$$\Rightarrow 60 - x = 7x - 350$$

$$\Rightarrow 7x + x = 350 + 60 = 410$$

$$\Rightarrow x = \frac{410}{8} = \text{Rs. } 51.25 \text{ lakhs}$$

Question 58

If the radius of a circle is increased by 27%, then its area will increase by

- A 61.29 percent
- B 54 percent
- C 27 percent
- D 30.645 percent

Answer: A

Explanation:

Let radius = 10 cm

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

$$\text{If radius is increased by 27\%, } \Rightarrow \text{New radius} = 10 + \frac{27}{100} \times 10 = 12.7 \text{ cm}$$

$$\text{New area} = \pi(12.7)^2 = 161.29\pi \text{ sq. cm}$$

$$\Rightarrow \% \text{ increase in area} = \frac{161.29 - 100}{100} \times 100$$

$$= 61.29 \%$$

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

Question 59

If Girilal's salary is $\frac{11}{7}$ times of Hariram's and Shekhar's is $\frac{3}{4}$ times of Hariram's, what is the ratio of Girilal's salary to Shekhar's salary.

- A 44:21
- B 28:33
- C 33:28
- D 21:44

Answer: A

Explanation:

Let Hariram's salary = $28x$

$$\Rightarrow \text{Girilal's salary} = \frac{11}{7} \times 28x = 44x$$

$$\Rightarrow \text{Shekhar's salary} = \frac{3}{4} \times 28x = 21x$$

$$\therefore \text{Ratio of Girilal's salary to Shekhar's} = \frac{44x}{21x}$$

$$= 44 : 21$$

=> Ans - (A)

Question 60

$(\cos A + \sin A)^2 + (\cos A - \sin A)^2$ is equals to

A 1

B 1/2

C 2

D 0

Answer: C

Explanation:

Expression : $(\cos A + \sin A)^2 + (\cos A - \sin A)^2$

$$= (\cos^2 A + \sin^2 A + 2.\sin A.\cos A) + (\cos^2 A + \sin^2 A - 2.\sin A.\cos A)$$

$$= (1 + 2.\sin A.\cos A) + (1 - 2.\sin A.\cos A)$$

$$= 1 + 1 = 2$$

=> Ans - (C)

Question 61

If a merchant offers a discount of 20% on the list price, then she makes a loss of 16%. What % profit or % loss will she make if she sells goods at a discount of 10% of the list price?

A 14 percent profit

B 20 percent profit

C 50 percent profit

D 5.5 percent loss

Answer: D

Explanation:

Let list price = Rs. $100x$

After 20% discount, selling price = $\frac{100-20}{100} \times 100x = \text{Rs. } 80x$

Let Cost price = Rs. y

$$\Rightarrow \text{Loss \%} = \frac{y-80x}{y} \times 100 = 16$$

$$\Rightarrow \frac{y-80x}{y} = \frac{16}{100} = \frac{4}{25}$$

$$\Rightarrow 25y - 2000x = 4y$$

$$\Rightarrow 25y - 4y = 2000x$$

$$\Rightarrow y = \frac{2000x}{21} = 95.23x$$

$$\text{If discount} = 10\%, \Rightarrow \text{Selling price} = \frac{100-10}{100} \times 100x = Rs.90x$$

$$\therefore \text{Loss \%} = \frac{95.23x-90x}{95.23x} \times 100$$

$$= 5.49 \approx 5.5\%$$

Question 62

The sum of all prime numbers between 30 and 42 is

A 103

B 109

C 105

D 104

Answer: B

Explanation:

Sum of prime numbers between 30 and 42 :

$$= 31 + 37 + 41$$

$$= 109$$

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

Question 63

The curved surface area of a hemisphere is 2772 sq cm, what is its radius? (Take $\pi = 22/7$)

A 42 cms

B 21 cms

C 10.5 cms

D 31.5 cms

Answer: B

Explanation:

Let radius of hemisphere = r cm

$$\Rightarrow \text{Curved surface area} = 2\pi r^2 = 2772$$

$$\Rightarrow 2 \times \frac{22}{7} \times (r)^2 = 2772$$

$$\Rightarrow (r)^2 = 2772 \times \frac{7}{44}$$

$$\Rightarrow (r)^2 = 63 \times 7 = 441$$

$$\Rightarrow r = \sqrt{441} = 21 \text{ cm}$$

\Rightarrow Ans - (B)

Question 64

If $\cos C - \cos D = x$, then value of x is

A $2\sin[(C+D)/2]\cos[(C-D)/2]$

B $2\cos[(C+D)/2]\sin[(C-D)/2]$

C $2\sin[(C+D)/2]\sin[(D-C)/2]$

D $2\cos[(C+D)/2]\cos[(C-D)/2]$

Answer: C

Explanation:

We know that, $\cos(x + y) = \cos x \cos y - \sin x \sin y$ -----(i)

and $\cos(x - y) = \cos x \cos y + \sin x \sin y$ -----(ii)

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

$$\cos(x + y) - \cos(x - y) = -2\sin x \sin y$$
 -----(iii)

Let $x + y = C$ and $x - y = D$

$$\Rightarrow x = \frac{C+D}{2}$$

$$\text{and } y = \frac{C-D}{2}$$

Substituting above values in equation (iii)

$$\Rightarrow \cos C - \cos D = -2\sin\left(\frac{C+D}{2}\right)\sin\left(\frac{C-D}{2}\right)$$

$$\Rightarrow \cos C - \cos D = 2\sin\left(\frac{C+D}{2}\right)\sin\left(\frac{D-C}{2}\right)$$

\Rightarrow Ans - (C)

Question 65

The value of x for which the expressions $12 - 6x$ and $4x + 2$ become equal is

A 0

B 2

C 1

D 4

Answer: C

Explanation:

Expressions : $12 - 6x$ and $4x + 2$

$$\Rightarrow 12 - 6x = 4x + 2$$

$$\Rightarrow 4x + 6x = 12 - 2$$

$$\Rightarrow 10x = 10$$

$$\Rightarrow x = \frac{10}{10} = 1$$

\Rightarrow Ans - (C)

Question 66

ΔDEF and ΔGHI are similar triangles. Length of DE is 4 cm and length of the corresponding side GH is 9 cm. What is the ratio of areas of ΔDEF and ΔGHI ?

A 81:16

B 4:9

C 16:81

D 9:4

Answer: C

Explanation:

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

Also, length of $DE = 4$ cm and length of the corresponding side $GH = 9$ cm

\Rightarrow Ratio of Area of ΔDEF : Area of $\Delta GHI =$ Ratio of square of corresponding sides $= (DE)^2 : (GH)^2$

$$= \frac{(4)^2}{(9)^2} = \frac{16}{81}$$

\therefore The required ratio is 16 : 81

\Rightarrow Ans - (C)

Question 67

To travel 816 km, an Express train takes 9 hours more than Rajdhani. If however, the speed of the Express train is doubled, it takes 4 hours less than Rajdhani. What is the speed of Rajdhani?

A 48 km/hr

B 62.8 km/hr

C 33.2 km/hr

D 77.5 km/hr

Answer: A

Explanation:

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

Using, time = distance/speed

$$\text{Acc. to ques, } \Rightarrow \frac{816}{y} - \frac{816}{x} = 9$$

$$\Rightarrow \frac{1}{y} - \frac{1}{x} = \frac{9}{816} = \frac{3}{272} \text{ -----(i)}$$

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

$$\Rightarrow \frac{816}{x} - \frac{816}{2y} = 4$$

$$\Rightarrow \frac{1}{x} - \frac{1}{2y} = \frac{4}{816} = \frac{1}{204} \text{ -----(ii)}$$

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

$$\Rightarrow \frac{1}{y} - \frac{1}{2y} = \frac{3}{272} + \frac{1}{204}$$

$$\Rightarrow \frac{1}{2y} = \frac{9+4}{816}$$

$$\Rightarrow y = \frac{408}{13} \text{ km/hr}$$

$$\therefore \text{Speed of Rajdhani} = \frac{1}{x} = \frac{13}{408} - \frac{3}{272}$$

$$\Rightarrow \frac{1}{x} = \frac{26-9}{816} = \frac{17}{816}$$

$$\Rightarrow x = \frac{816}{17} = 48 \text{ km/hr}$$

Question 68

What would be the equation of the line, which intercepts x-axis at -5 and is perpendicular to the line $y = 2x + 3$?

A $x - 2y = -5$

B $x + 2y = 5$

C $x + 2y = -5$

D $x - 2y = 5$

Answer: C

Explanation:

Let the line be l which has x-intercept -5, $\Rightarrow l$ passes through (-5,0)

Slope of line $ax + by + c = 0$ is $-\frac{a}{b}$

$$\Rightarrow \text{Slope of line } y = 2x + 3 \Rightarrow 2x - y + 3 = 0$$

$$\Rightarrow \text{Slope} = \frac{-2}{-1} = 2$$

Product of slopes of two perpendicular lines = -1

Let slope of line $l = m$

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

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

Now, equation of line having slope m and passing through (x_1, y_1) is $(y - y_1) = m(x - x_1)$

$$\Rightarrow (y - 0) = \frac{-1}{2}(x + 5)$$

$$\Rightarrow 2y = -x - 5$$

$$\Rightarrow x + 2y = -5$$

Question 69

If $4pxy = (x + 2y)^2 - (x - 2y)^2$, then what will be the value of p ?

A 0.5

B 0.25

C 4

D 2

Answer: D

Explanation:

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

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

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

$$\Rightarrow 4pxy = 8xy$$

$$\Rightarrow p = \frac{8}{4} = 2$$

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

Question 70

In the first 26 overs of a cricket match, the run rate was 5.4 runs/over. What is the required run rate in the remaining 24 overs to reach the target of 294 runs?

A 7

B 6.4

C 7.6

D 5.8

Answer: B

Explanation:

Run rate in 26 overs = 5.4 runs/over

=> Runs scored in 26 overs = $26 \times 5.4 = 140.4$

Runs needed to score in 24 overs = $294 - 140.4 = 153.6$

=> Run rate required = $\frac{153.6}{24} = 6.4$

=> Ans - (B)

Question 71

What is the value of $\tan\left(-\frac{5\pi}{6}\right)$

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

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

C $\sqrt{3}$

D $-\sqrt{3}$

Answer: B

Explanation:

Expression : $\tan\left(-\frac{5\pi}{6}\right)$

$= -\tan\left(\frac{5\pi}{6}\right)$

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

$= \tan\left(\frac{\pi}{6}\right) = \frac{1}{\sqrt{3}}$

=> Ans - (B)

Question 72

Refer the below data table and answer the following question

	Number of employees	Annual salary (in lakhs)	Bonus as percent of annual salary
Manager	1	48	40%
Executive	6	16	20%
Trainee	2	2	20%

What is the average bonus received by each employee (employee includes all - Manager, Executive, and Trainee)?

- A 3920004
- B 220000
- C 228000
- D 435556

Answer: D

Explanation:

Total bonus of managers (in lakh) = $1 \times 48 \times \frac{40}{100} = 19.2$ lakhs

Total bonus of executive (in lakh) = $6 \times 16 \times \frac{20}{100} = 19.2$ lakhs

Total bonus of trainee (in lakh) = $2 \times 2 \times \frac{20}{100} = 0.8$ lakhs

=> Average bonus in rupees = $\frac{(19.2+19.2+0.8)}{(1+6+2)}$

= $\frac{39.2}{9} = 4.35556$ lakhs = 4,35,556

=> Ans - (D)

Question 73

Refer the below data table and answer the following question.

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

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

- A 2013 & 2014

B 2013 & 2015

C 2011 & 2012

D 2014 & 2015

Answer: A

Explanation:

Total exports from the three companies together in :

$$2011 = 4000 + 1000 + 1000 = 6000$$

$$2012 = 3000 + 1000 + 1000 = 5000$$

$$2013 = 3000 + 1000 + 4000 = 8000$$

$$2014 = 1000 + 5000 + 2000 = 8000$$

$$2015 = 2000 + 4000 + 1000 = 7000$$

Clearly, total exports in 2013 and 2014 are equal to 8000

=> Ans - (A)

Question 74

Refer the below data table and answer the following Question.

Year	Profit or (-Loss) in Rs crore
2011	5
2012	-5
2013	20
2014	5
2015	-5

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

A Profit of Rs 30 crores

B Loss of Rs 20 crores

C Loss of Rs 30 crores

D Profit of Rs 20 crores

Answer: D

Explanation:

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

$$= 5 - 5 + 20 + 5 - 5$$

$$= \text{Rs. 20 crore}$$

Since, it is positive, thus profit of Rs. 20 crore

=> Ans - (D)

Question 75

Refer the below data table and answer the following Question.

India's Exports in 2015	Value in Million US\$
Jewellery	500
Software	850
Cotton	950
Steel	1000
Electronics	875

Electronics was what percent of total exports?

- A 23.46 percent
- B 25.96 percent
- C 18.46 percent
- D 20.96 percent

Answer: D

Explanation:

Value in millions of electronics = 875

Total exports = 500 + 850 + 950 + 1000 + 875 = 4175

=> % of electronics in total exports = $\frac{875}{4175} \times 100$

= $\frac{3500}{167} = 20.96\%$

=> Ans - (D)

English

Instructions

For the following questions answer them individually

Question 76

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

Open to more than one interpretation; not having one obvious meaning.

- A trite
- B opposite
- C exceptional
- D ambiguous

Answer: D

Question 77

Select the word with the correct spelling.

- A humanoide
- B rikshaw
- C deviance
- D virtuos

Answer: C

Question 78

Select the antonym of vibrant

- A drab
- B gaudy
- C jazzy
- D vivid

Answer: A

Question 79

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.

If you are caught using a calculator in the exam then it will be

- A taken

- B confiscated
- C confisticate
- D under possession

Answer: B

Question 80

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.

"Please don't hit me" Rita said to the attacker.

- A Rita begged the attacker to not to hit her.
- B Rita told the attacker to not hit her.
- C Rita begged the attacker not to hit her.
- D Rita pleaded with the attacker to not to hit her.

Answer: A

Question 81

Select the synonym of dignity

- A decency
- B immoral
- C primacy
- D chagrin

Answer: A

Question 82

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'.

Indian Defence forces(A)/fought the enemy(B)/till the last soldier was standing.(C)/No error(D)

- A A
- B B

C C

D D

Answer: A

Question 83

Choose the synonym of defecate

A chaff

B quench

C ingest

D secrete

Answer: D

Question 84

Select the word with the correct spelling.

A bargundy

B panacea

C revolwer

D cantinue

Answer: B

Question 85

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.

.....and my younger brother went to the movies all by ourselves.

A I

B Mine

C Myself

D My own self

Answer: A

Question 86

Rearrange the parts of the sentence in correct order

**The truth about these P-communities is that Q-they deserve to die
R-dysfunctional, downscale**

A PQR

B QPR

C RPQ

D RQP

Answer: C

Question 87

Improve the bracketed part of the sentence.

The unfortunate old man was knocked (away by) the rash driver.

A out by

B off by

C by

D no improvement

Answer: A

Question 88

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

Something widely feared as a possible dangerous occurrence.

A spectre

B beguile

C monolith

D canny

Answer: A

Question 89

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 landlord could not(A)/tell which of the servant(B)/broke the glass.(C)/No error(D)

A A

B B

C C

D D

Answer: B

Question 90

Improve the bracketed part of the sentence. One should get (trained) to prepare one's own breakfast.

A habituated

B used

C prepared

D no improvement

Answer: B

Question 91

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

Mrs. Vaijanthi teaches us literature.

A We have been taught literature by Mrs. Vaijanthi.

B Literature is being taught by Mrs. Vaijanthi to us.

C Literature is being taught to us by Mrs. Vaijanthi.

D Literature is taught by Mrs. Vaijanthi to us.

Answer: C

Question 92

Select the antonym of deep-seated

- A chronic
- B temporary
- C inbred
- D subconscious

Answer: B

Question 93

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

Zero tolerance

- A Accuracy is paramount
- B Non-acceptance of antisocial behaviour
- C No return without risk
- D No problem at all

Answer: B

Question 94

Rearrange the parts of the sentence in correct order.

Do not be anxious about

P-thanksgiving, present your requests to God

Q-and petition, with

R-anything, but in every situation, by prayer

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

Answer: D

Question 95

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

Variety is the spice of life

- A New experiences make life more interesting
- B Experimentation may be risky
- C Life is very beautiful
- D There is no life without excitement

Answer: A

Instructions

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

Potholes and(1) placed speed breakers of all shapes and sizes on city streets have become a health(2) for two-wheeler riders. From cuts and bruises, wounds, and a visit to the emergency room to serious and(3) back and neck-related complications, potholes have become an (4) for those on the road. Doctors report an increase in patients with injuries and serious bone-related(5) in the monsoon.

Question 96

(1)

- A haphazardly
- B accidentally
- C casually
- D randomly

Answer: A

Question 97

(2)

- A risk
- B threat

C danger

D hazard

Answer: D

Question 98

(3)

A chronic

B painful

C hurtful

D terrible

Answer: A

Question 99

(4)

A health risk

B dangerous situation

C imminent threat

D epidemic

Answer: C

Question 100

(5)

A confusions

B complications

C complexities

D difficulties

Answer: B

SSC CHSL 7 Jan 2017 Evening Shift

Reasoning

Instructions

For the following questions answer them individually

Question 1

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

The Time Machine: H. G. Wells :: Julius Caesar : ?

- A Rabindra Nath Tagore
- B William Shakespeare
- C Charles Dickens
- D Leo Tolstoy

Answer: B

Explanation:

The Time Machine is written by H. G. Wells, similarly Julius Caesar was written by *William Shakespeare*.

=> Ans - (B)

Question 2

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

SAP : WET :: ? : XVI

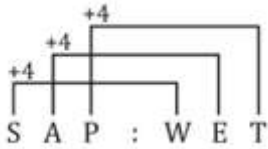
- A TRE
- B SQR
- C SRQ
- D PNR

Answer: A

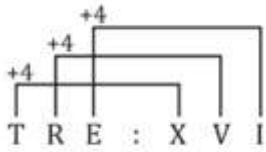
Explanation:

Expression = SAP : WET :: ? : XVI

The pattern followed is :



Similarly, for XVI :



=> Ans - (A)

Question 3

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

LK : OP :: ? : UV

A ML

B TU

C NQ

D FE

Answer: D

Explanation:

Expression = LK : OP :: ? : UV

Alphabets at the corresponding position from the reverse end are written.

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

Similarly, FE : UV

=> Ans - (D)

Question 4

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

16 : 50 :: 24 : ?

A 75

B 70

C 74

D 79

Answer: C

Explanation:

Expression = $16 : 50 :: 24 : ?$

The pattern followed is = $x : 3x + 2$

Eg :- $16 : 3 \times 16 + 2 = 16 : 50$

Similarly, $(3 \times 24) + 2 = 72 + 2 = 74$

=> Ans - (C)

Question 5

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

A Vishakhapatnam

B Mumbai

C Kochi

D Bhubaneshwar

Answer: D

Explanation:

All except Bhubaneshwar are harbours, hence it is the odd one out.

=> Ans - (D)

Question 6

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

A eno

B iqa

C ubu

D olr

Answer: D

Explanation:

Except for 'olr', all words contain 2 vowels, hence it is the odd one out.

=> Ans - (D)

Question 7

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

A 2691

B 9900

C 5632

D 2790

Answer: C

Explanation:

Except for 5632, sum of digits of all other numbers is 18, hence it is the odd one out.

=> Ans - (C)

Question 8

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

A 308

B 108

C 288

D 240

Answer: A

Explanation:

Except 308, other are divisible by 3, hence 308 is the odd one out.

=> Ans - (A)

Question 9

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

Acute angle, right angle, obtuse angle, ?

A Exterior angle

B Reflex angle

C Straight angle

D Supplementary angle

Answer: C

Explanation:

Angles in increasing order are given.

= Acute angle -> Right angle -> Obtuse angle -> Straight angle

=> Ans - (C)

Question 10

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

RS, WX, ? , GH

A BC

B AB

C CD

D EG

Answer: A

Explanation:

Expression : RS, WX, ? ,GH

The pattern followed in each letter of the terms is :

1st letter : R (+5 letters) = W (+5 letters) = B (+5 letters) = G

2nd letter : S (+5 letters) = X (+5 letters) = C (+5 letters) = H

Thus, missing term = **BC**

=> Ans - (A)

Question 11

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

VUT, ONM, GFE, ?

A XWV

B WVX

C XYZ

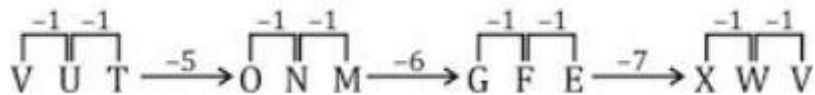
D WVU

Answer: A

Explanation:

Expression : VUT, ONM, GFE, ?

The pattern followed is :



Thus, missing term = XWV

=> Ans - (A)

Question 12

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

10, 22, 46, ?

A 90

B 91

C 95

D 94

Answer: D

Explanation:

The pattern followed is :

$$10 \times 2 + 2 = 22$$

$$22 \times 2 + 2 = 46$$

$$46 \times 2 + 2 = 94$$

=> Ans - (D)

Question 13

In the following question, two statements are given each followed by two conclusions I and II. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

Statement:

- (I) The water pollutants are rising slowly and spoiling the sanctity of water.
- (II) Main cause of water pollution is industrialization and lack of sustainable approach towards environment.

Conclusions:

- (I) Industries are mixing all the left-over slurries into the water body nearby causing immense pollution.
- (II) Future generations are need to be thought about before getting involved in pollution causing activities.

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

Answer: D

Question 14

Vishu, Pooja, Vishakha, Rani and Ram are sitting in a line. Pooja is third to the extreme right end. Vishu is second to the left of Pooja. Vishakha is to the right of Pooja. Rani is third to the right of Ram, who is the immediate neighbour of Vishu. Who is sitting in the middle?

- A Pooja
- B Ram
- C Visakha
- D Rani

Answer: A

Explanation:

Pooja is third to the extreme right end. Vishu is second to the left of Pooja.

=> Vishu sits at extreme left end.

Vishakha is to the right of Pooja. Rani is third to the right of Ram, who is the immediate neighbour of Vishu.

=> Rani sits at extreme right end, and Ram sits between Vishu and Pooja.

Thus, arrangement :

Vishu	Ram	Pooja	Vishakha	Rani
-------	-----	-------	----------	------

∴ Pooja is sitting in the middle.

=> Ans - (A)

Question 15

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

- i. Manufacture
- ii. Manualism
- iii. Manumission
- iv. Manual

A iv, ii, i, iii

B iii, ii, i, iv

C ii, iv, i, iii

D i, ii, iii, iv

Answer: A

Explanation:

As per the order of dictionary :

= Manual -> Manualism -> Manufacture -> Manumission

≡ iv, ii, i, iii

=> Ans - (A)

Question 16

In a certain code language, "TOAST" is written as "56345" and "TRAIN" is written as "59310". How is "TORN" written in that code language?

A 5634

B 5609

C 5690

D 5663

Answer: C

Explanation:

The codes for each letter is given :

T -> 5

O -> 6

R -> 9

N -> 0

Thus, TORN : **5690**

=> Ans - (C)

Question 17

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

25	144	60
81	225	135
49	289	?

A 119

B 120

C 170

D 190

Answer: A

Explanation:

The pattern followed is that in each row the number at the end is the square root of the product of first two.

$$\text{Eg :- } \sqrt{25 \times 144} = \sqrt{5 \times 5 \times 12 \times 12} = 5 \times 12 = 60$$

$$\sqrt{81 \times 225} = \sqrt{9 \times 9 \times 15 \times 15} = 9 \times 15 = 225$$

$$\text{Similarly, } \sqrt{49 \times 289} = \sqrt{7 \times 7 \times 17 \times 17} = 7 \times 17 = 119$$

=> Ans - (A)

Question 18

If "-" means "plus", "x" means "divided by", "÷" means "multiply" and "+" means "subtraction", then $25 + 54 \times 6 - 20 \div 10 = ?$

A 218

B 219

C 216

D 230

Answer: C

Explanation:

Expression : $25 + 54 \times 6 - 20 \div 10 = ?$

$$\equiv 25 - 54 \div 6 + 20 \times 10$$

$$= 25 - \frac{54}{6} + 200$$

$$= 225 - 9 = 216$$

=> Ans - (C)

Question 19

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

c_e_cd_f_de_

A dfecf

B dfcef

C fdcef

D dffcd

Answer: A

Explanation:

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

= cdef cdef cdef

=> Ans - (A)

Question 20

Arjun is facing east. He walks 10 m in this direction, then turns left and walks for another 10 m, then he turns right to walk 25 m and from there he walks another 10 m towards south. Finally, he walks 50 m to his left. How far is he from his original position?

A 85 m

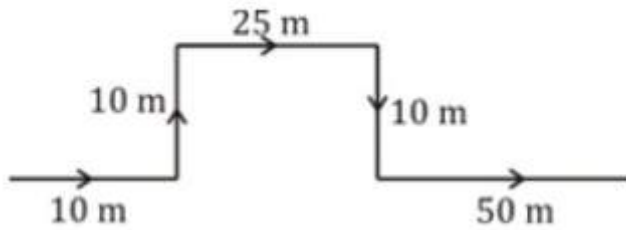
B 80 m

C 75 m

D 90 m

Answer: A

Explanation:



Arjun is facing east. He walks 10 m in this direction, then turns left and walks towards north for another 10 m, then he turns right to walk 25 m east and from there he walks another 10 m towards south. Finally, he walks 50 m to his left towards the east direction.

Thus, distance between his original and final position = $10 + 25 + 50 = 85$ m

=> Ans - (A)

Question 21

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example, 'N' can be represented by 23, 00 etc. and 'R' can be represented by 88, 95 etc. Similarly, you have to identify the set for the word 'HIGHLY'.

Matrix - I

	0	1	2	3	4
0	N	D	P	R	B
1	G	E	R	A	R
2	H	R	L	N	E
3	R	C	Y	E	G
4	S	V	E	Y	H

Matrix - II

	5	6	7	8	9
5	S	H	L	H	G
6	D	L	H	G	G
7	E	H	N	I	D
8	Q	S	I	R	A
9	R	I	Y	B	S

- A 58, 78, 69, 20, 22, 31
- B 76, 96, 68, 43, 66, 43
- C 76, 78, 10, 44, 57, 32
- D 67, 87, 98, 76, 77, 86

Answer: C

Explanation:

- (A) : 58, 78, 69, 20, 22, 31 = HIGHLC
- (B) : 76, 96, 68, 43, 66, 43 = HIGYLY
- (C) : 76, 78, 10, 44, 57, 32 = **HIGHLY**
- (D) : 67, 87, 98, 76, 77, 86 = HIBHNS

=> Ans - (C)

Question 22

Introducing a girl Anjali says, "She is the daughter of the only sister of the son of my mother". How is the girl related to Anjali?

- A Cousin
- B Daughter
- C Sister-in-law
- D Niece

Answer: B

Explanation:

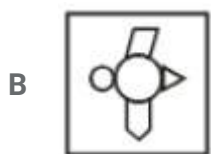
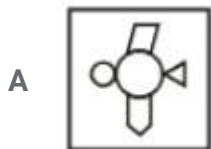
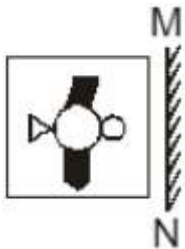
Sister of Anjali's mother's son = Anjali herself

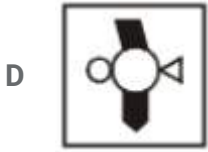
Now, the given girl is the daughter of Anjali.

=> Ans - (B)

Question 23

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



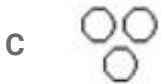


Answer: D

Question 24

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

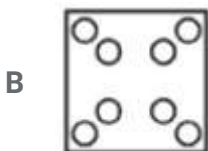
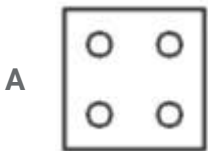
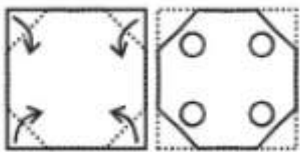
Liquid, Water, Oil

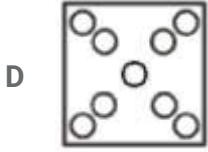
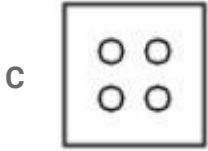


Answer: A

Question 25

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





Answer: B

General Awareness

Instructions

For the following questions answer them individually

Question 26

Buddhist Monuments at Sanchi is in _____.

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

Answer: B

Question 27

Which of these Bollywood actresses has not won the National Film Award?

- A Raveena Tandon
- B Vidya Balan
- C Smita Patil
- D Madhuri Dixit

Answer: D

Question 28

Which drug is used as an Anti-Histamine?

- A Fexofenadine
- B Ranitidine
- C Promethazine
- D Ibuprofen

Answer: C

Question 29

Carotene in fruits and vegetables gives it which color?

- A Green
- B Pink
- C Orange
- D Blue

Answer: C

Question 30

Equus Caballus is the scientific name of _____.

- A Horse
- B Zebra
- C Donkey
- D Buffalo

Answer: A

Question 31

Analgesics _____.

- A relieve acidity

- B relieve pain
- C relieve itching
- D relieve bloating

Answer: B

Question 32

Atomic number of which of the following elements is greater than that of Calcium?

- A Chlorine
- B Argon
- C Sulphur
- D Scandium

Answer: D

Question 33

Garba is a folk dance of _____.

- A Mizoram
- B Puducherry
- C Gujarat
- D Rajasthan

Answer: C

Question 34

A ceramic pottery unit hires 8 craftsmen by paying each of them Rs 900 per day. The 9th craftsman demands Rs 950 per day. If this craftsman is hired then all other craftsmen must be paid Rs 950. The marginal resource (labour) cost of the 9th craftsman is _____.

- A Rs 1530
- B Rs 1050
- C Rs 50

D Rs 1350

Answer: D

Question 35

In a period when an economy is facing price rise, and along with that there is slowing down of economy activities, this is case of _____.

A Deflation

B Stagflation

C Recession

D Depression

Answer: B

Question 36

Human Beings belong to which category of the ecosystem?

A Omnivores

B Carnivores

C Herbivores

D Zooplankton

Answer: A

Question 37

Which Indian State has the highest GDP?

A Gujarat

B Maharashtra

C Karnataka

D Andhra Pradesh

Answer: B

Question 38

What is the capital of Uttarakhand?

- A Almora
- B Pithoragarh
- C Chamoli
- D Dehradun

Answer: D

Question 39

The outermost layer of Earth is called _____.

- A Sphere
- B Crust
- C Mantle
- D Core

Answer: B

Question 40

Which Buddhist Council was held soon after the death of Gautam Buddha?

- A Fourth
- B Third
- C Second
- D First

Answer: D

Question 41

The Ibadat Khana was a meeting house built by which Mughal Emperor?

- A Babur

- B Humayun
- C Akbar
- D Aurangzeb

Answer: C

Question 42

Revolving Door was invented by _____.

- A Lucien Vidi
- B John Venn
- C Theophilus Van Kannel
- D Lewis Urry

Answer: C

Question 43

Instrument for measuring work performed is called _____.

- A Eudiometer
- B Anemometer
- C Hyetometer
- D Ergometer

Answer: D

Question 44

What is the unit of the physical quantity "Stress"?

- A newton second
- B steradian
- C pascal
- D joule

Answer: C

Question 45

Panchayati Raj system has an Intermediate tier known as _____.

- A** Gram Panchayat
- B** Zila Parishad
- C** Sarpanch Panchayat
- D** Panchayat Samiti

Answer: D

Question 46

The number of parliamentary seats (Lok Sabha) of Goa is _____.

- A** 2
- B** 13
- C** 20
- D** 25

Answer: A

Question 47

Andy Murray is associated with which Sport?

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

Answer: A

Question 48

Who is the author of "Chanakya's Chant"?

- A Amish Tripathi
- B Chitra Banerjee Divakaruni
- C Ruskin Bond
- D Ashwin Sanghi

Answer: D

Question 49

Which of the following is not considered as a part of the Abiotic Environment?

- A Plants
- B Air
- C Water
- D Soil

Answer: A

Question 50

Which company developed 'Swift' Programming Language?

- A Google
- B Microsoft
- C Facebook
- D Apple

Answer: D

Mathematics

Instructions

For the following questions answer them individually

Question 51

If $\tan 45^\circ + \operatorname{cosec} 30^\circ = x$, then find the value of x .

A $\sqrt{3}$

B $\frac{1-2\sqrt{2}}{\sqrt{2}}$

C $\frac{\sqrt{3}-4}{2\sqrt{3}}$

D 3

Answer: D

Explanation:

Expression : $\tan 45^\circ + \operatorname{cosec} 30^\circ = x$

$$= 1 + \frac{1}{\sin 30} = 1 + \frac{1}{\frac{1}{2}}$$

$$= 1 + 2 = 3$$

=> Ans - (D)

Question 52

A wholesaler sells a watch to a retailer at a gain of 20% and the retailer sells it to a customer at a loss of 10%. If the customer pays Rs 874.8, what had it cost the wholesaler?

A Rs 945

B Rs 810

C Rs 994

D Rs 675

Answer: B

Explanation:

For the wholesaler,

Let the cost price = Rs. $100x$

With profit of 20%, Selling price = $\frac{120}{100} \times 100x = Rs.120x$

For the retailer,

Cost price = Rs. $120x$

With a loss of 10%, Selling price = $\frac{90}{100} \times 120x = Rs.108x$

For the customer,

$$\text{Cost price} = 108x = 874.8$$

$$\Rightarrow x = \frac{874.8}{108} = \frac{97.2}{12} = 8.1$$

$$\therefore \text{Cost price for retailer} = 100 \times 8.1 = \text{Rs}810$$

Question 53

If $\sqrt{\frac{(1+\cos A)}{2}} = x$, then find the value of x .

A $\sin(A/2)$

B $\tan(A/2)$

C $\cot(A/2)$

D $\cos(A/2)$

Answer: D

Explanation:

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

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

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

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

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

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

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

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

\Rightarrow Ans - (D)

Question 54

P and Q can do a project in 150 and 100 days respectively. In how many days can they complete 60% of the project if they work together?

A 12 days

B 72 days

C 42 days

D 36 days

Answer: D

Explanation:

Let total project to be done = 300 units

$$P's \text{ efficiency} = \frac{300}{150} = 2 \text{ units/day}$$

$$Q's \text{ efficiency} = \frac{300}{100} = 3 \text{ units/day}$$

$$60\% \text{ of the work} = \frac{60}{100} \times 300 = 180 \text{ units}$$

$$(P + Q)'s \text{ 1 day's efficiency} = 2 + 3 = 5 \text{ units/day}$$

$$\therefore \text{Time taken by them to complete 60\% of the work together} = \frac{180}{5} = 36 \text{ days}$$

Question 55

If $\sec A + \tan A = x$, then find the value of x .

A $\sqrt{\left[\frac{(1-\sin A)}{(1+\sin A)}\right]}$

B $(1 + \sin A)/(1 - \sin A)$

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

D $\sqrt{\left[\frac{(1+\sin A)}{(1-\sin A)}\right]}$

Answer: D

Explanation:

Expression : $\sec A + \tan A = x$

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

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

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

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

=> Ans - (D)

Question 56

A cone of height 12 cm and diameter 10 cm is mounted on a hemisphere of the same diameter. What is the volume of the solid thus formed?

A 384.13 sq cm

B 576.19 sq cm

C 192.06 sq cm

D 288.1 sq cm

Answer: B

Explanation:

Height of cone, $h = 12$ cm and radius of cone, $r = 5$ cm

Radius of hemisphere, $r = 5$ cm

Volume of solid = Volume of cone + Volume of hemisphere

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

$$= \left(\frac{\pi r^2}{3}\right)[h + 2r]$$

$$= \left(\frac{22 \times 25}{7 \times 3}\right)(12 + 10)$$

$$= \frac{22 \times 22 \times 25}{21} = \frac{12100}{21}$$

$$= 576.19 \text{ cm}^2$$

Question 57

The length of the diagonal of a rectangle is 26 cm and that of one side is 10 cm. What is the area of this rectangle?

A 260 sq cm

B 120 sq cm

C 130 sq cm

D 240 sq cm

Answer: D

Explanation:

Let breadth of the rectangle $b = 10$ cm and diagonal $d = 26$ cm

Let length of rectangle = l cm

$$\text{Using, } (l)^2 + (b)^2 = (d)^2$$

$$\Rightarrow (l)^2 + (10)^2 = (26)^2$$

$$\Rightarrow (l)^2 = 676 - 100 = 576$$

$$\Rightarrow l = \sqrt{576} = 24 \text{ cm}$$

$$\therefore \text{Area of rectangle} = l \times b$$

$$= 24 \times 10 = 240 \text{ cm}^2$$

Question 58

What smallest number should be added to 2401 so that the sum is completely divisible by 14 ?

- A 8
- B 7
- C 4
- D 5

Answer: B

Explanation:

Factorizing $2401 = 14 \times 171 + 7$

Thus, on dividing 2401 by 14, the remainder is 7

\therefore The number that must be added to 2401 so that the sum obtained is completely divisible by 14

$$= 14 - 7 = 7$$

\Rightarrow Ans - (B)

Question 59

If a merchant offers a discount of 25% on the list price, then he makes a loss of 5%. What % profit or % loss will he make if he sells at a discount of 10% of the list price?

- A 5.5 percent loss
- B 14 percent profit
- C 50 percent profit
- D 26 percent loss

Answer: B

Explanation:

Let list price = Rs. $100x$

After 25% discount, selling price = $\frac{100-25}{100} \times 100x = \text{Rs. } 75x$

Let Cost price = Rs. y

$$\Rightarrow \text{Loss \%} = \frac{y-75x}{y} \times 100 = 5$$

$$\Rightarrow \frac{y-75x}{y} = \frac{5}{100} = \frac{1}{20}$$

$$\Rightarrow 20y - 1500x = y$$

$$\Rightarrow 20y - y = 1500x$$

$$\Rightarrow y = \frac{1500x}{19} \approx 79x$$

$$\text{If discount} = 10\%, \Rightarrow \text{Selling price} = \frac{100-10}{100} \times 100x = Rs.90x$$

$$\therefore \text{Profit \%} = \frac{90x-79x}{79x} \times 100$$

$$= 13.92 \approx 14\%$$

Question 60

P(3,1) and R(-7,5) are vertices of a rhombus PQRS. What is the equation of diagonal QS?

A $5x - 2y = 16$

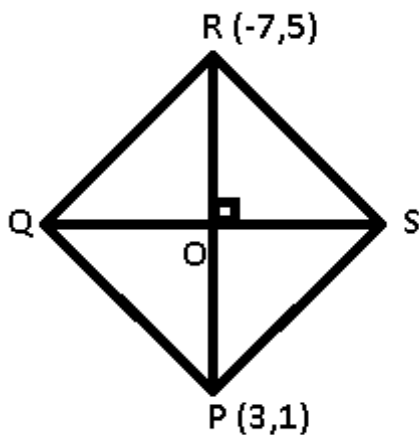
B $5x - 2y = -16$

C $5x + 2y = -16$

D $5x + 2y = 16$

Answer: B

Explanation:



Diagonals of a rhombus bisect each other perpendicularly. Thus, O is the mid point of QS and RP.

Coordinates of midpoint of line joining A = (x_1, y_1) and B = (x_2, y_2) is $(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2})$

$$\Rightarrow O = (\frac{3-7}{2}, \frac{1+5}{2}) = (-2, 3)$$

$$\text{Slope of PR} = \frac{1-5}{3+7} = \frac{-2}{5}$$

Product of slopes of two perpendicular lines is -1

$$\Rightarrow \text{Slope of QS} = m \times \frac{-2}{5} = -1$$

$$\Rightarrow m = \frac{5}{2}$$

\therefore Equation of line QS with slope $m = \frac{5}{2}$ and passing through point O $(x_1, y_1) = (-2, 3)$

$$= (y - y_1) = m(x - x_1)$$

$$= (y - 3) = \frac{5}{2}(x + 2)$$

$$= 2y - 6 = 5x + 10$$

$$= 5x - 2y = -16$$

Question 61

If $5A = 13B = 7C$; find the value of $A : B : C$.

A 91:35:65

B 65:35:91

C 35:91:65

D 7:13:5

Answer: A

Explanation:

Let $5A = 13B = 7C = k$

$$\Rightarrow A = \frac{k}{5}, B = \frac{k}{13}, C = \frac{k}{7}$$

$$\Rightarrow \text{Ratio of } A : B : C = \frac{k}{5} : \frac{k}{13} : \frac{k}{7}$$

$$= \frac{1}{5} : \frac{1}{13} : \frac{1}{7}$$

L.C.M. of 5,13 and 7 = 455, thus multiplying by 455, we get :

$$= \frac{455}{5} : \frac{455}{13} : \frac{455}{7}$$

$$= 91 : 35 : 65$$

Question 62

To travel 708 km, an Express train takes 6 hours more than Rajdhani train. If however, the speed of the Express train is doubled, it takes 3 hours less than Rajdhani train. What is the speed of Rajdhani train?

A 59 km/hr

B 78.7 km/hr

C 39.3 km/hr

D 98.3 km/hr

Answer: A

Explanation:

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

Using, time = distance/speed

$$\text{Acc. to ques, } \Rightarrow \frac{708}{y} - \frac{708}{x} = 6$$

$$\Rightarrow \frac{1}{y} - \frac{1}{x} = \frac{6}{708} = \frac{1}{118} \text{-----(i)}$$

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

$$\Rightarrow \frac{708}{x} - \frac{708}{2y} = 3$$

$$\Rightarrow \frac{1}{x} - \frac{1}{2y} = \frac{3}{708} = \frac{1}{236} \text{-----(ii)}$$

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

$$\Rightarrow \frac{1}{y} - \frac{1}{2y} = \frac{1}{118} + \frac{1}{236}$$

$$\Rightarrow \frac{1}{2y} = \frac{3}{236}$$

$$\Rightarrow y = \frac{118}{3} \text{ km/hr}$$

$$\therefore \text{Speed of Rajdhani} = \frac{1}{x} = \frac{3}{118} - \frac{1}{118}$$

$$\Rightarrow \frac{1}{x} = \frac{2}{118} = \frac{1}{59}$$

$$\Rightarrow x = 59 \text{ km/hr}$$

Question 63

Find measure of central angle of the arc whose length is 22 cm and radius of the circle is 28 cm?

A 60°

B 45°

C 75°

D 90°

Answer: B

Explanation:

Radius = 28 cm and let central angle = θ

$$\text{Length of arc} = \frac{\theta}{360} \times 2\pi r = 22$$

$$\Rightarrow \frac{\theta}{360} \times 2 \times \frac{22}{7} \times 28 = 22$$

$$= \frac{\theta}{360} \times 2 \times 4 = 1$$

$$\Rightarrow \theta = \frac{360}{8} = 45^\circ$$

\Rightarrow Ans - (B)

Question 64

The area of an equilateral triangle is $9\sqrt{3}$ sq cm, find its perimeter?

A 18 cm

B 9 cm

C $9\sqrt{3}$ cm

D $6\sqrt{3}$ cm

Answer: A

Explanation:

Let the side of equilateral triangle = a cm

$$\text{Area of equilateral triangle} = \frac{\sqrt{3}}{4}a^2 = 9\sqrt{3}$$

$$\Rightarrow a^2 = 9 \times 4 = 36$$

$$\Rightarrow a = \sqrt{36} = 6 \text{ cm}$$

\therefore Perimeter of equilateral triangle = $3a$

$$= 3 \times 6 = 18 \text{ cm}$$

\Rightarrow Ans - (A)

Question 65

If $3x - 10 = -(2x + 5)$, then the numerical value of $(x - 4)^3$ is

A 27

B 125

C -125

D -27

Answer: D

Explanation:

$$\text{Expression : } 3x - 10 = -(2x + 5)$$

$$\Rightarrow 3x - 10 = -2x - 5$$

$$\Rightarrow 3x + 2x = 10 - 5 = 5$$

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

To find : $(x - 4)^3$

$$= (1 - 4)^3 = (-3)^3 = -27$$

\Rightarrow Ans - (D)

Question 66

The average revenues of 13 consecutive years of a company is Rs 82 lakhs. If the average of first 7 years is Rs 77 lakhs and that of last 7 years is Rs 89 lakhs, find the revenue for the 7th year.

- A Rs 98 lakhs
- B Rs 94 lakhs
- C Rs 96 lakhs
- D Rs 92 lakhs

Answer: C

Explanation:

Total revenues of 13 years of the company = $82 \times 13 = \text{Rs. } 1066$ lakhs

Total revenue of first 7 years = $77 \times 7 = \text{Rs. } 539$ lakhs

Total revenue of last 7 years = $89 \times 7 = \text{Rs. } 623$ lakhs

\therefore Revenue of 7th year = $(539 + 623) - 1066 = 1162 - 1066$

= Rs. 96 lakhs

Question 67

If $xy = -30$ and $x^2 + y^2 = 61$, then find the value of $(x + y)$.

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

Answer: C

Explanation:

Given : $(x^2 + y^2) = 61$ and $xy = -30$

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

$\Rightarrow (x + y)^2 = 61 + (2 \times -30)$

$\Rightarrow (x + y) = \sqrt{61 - 60} = 1$

\Rightarrow Ans - (C)

Question 68

A bank offers 10% compound interest per half year. A customer deposits Rs. 3600 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by way of interest is.

A Rs 1116

B Rs 2232

C Rs 549

D Rs 279

Answer: C

Explanation:

Principal = Rs. 3,600 and Rate = 10%

Amount on half yearly basis = $P\left(1 + \frac{R}{2 \times 100}\right)^{2 \times T}$

$$= [3600\left(1 + \frac{10}{2 \times 100}\right)^{2 \times 1}] + [3600\left(1 + \frac{10}{2 \times 100}\right)^{2 \times \frac{1}{2}}]$$

$$= [3600 \times \left(\frac{21}{20}\right)^2] + [3600 \times \frac{21}{20}]$$

$$= [9 \times 441] + [180 \times 21]$$

$$= (9 \times 21) \times (21 + 20)$$

$$= 9 \times 21 \times 41 = Rs. 7,749$$

∴ Compound Interest = Rs.(7749 - 7200) = Rs. 549

Question 69

A number is greater than five times its reciprocal by 19/2. Find the number.

A 11

B 9

C 10

D 8

Answer: C

Explanation:

Let the number be x

According to ques,

$$\Rightarrow x - \left(5 \times \frac{1}{x}\right) = \frac{19}{2}$$

$$\Rightarrow \frac{x^2 - 5}{x} = \frac{19}{2}$$

$$\Rightarrow 2x^2 - 10 = 19x$$

$$\Rightarrow 2x^2 - 19x - 10 = 0$$

$$\Rightarrow 2x^2 + x - 20x - 10 = 0$$

$$\Rightarrow x(2x + 1) - 10(2x + 1) = 0$$

$$\Rightarrow (2x + 1)(x - 10) = 0$$

$$\Rightarrow x = \frac{-1}{2}, 10$$

Since x can't be negative, $\Rightarrow x = 10$

Question 70

An engineering student has to secure 36% marks to pass. He gets 53 and fails by 37 marks. Find the maximum marks.

A 275 marks

B 250 marks

C 300 marks

D 325 marks

Answer: B

Explanation:

Let maximum marks = $100x$

$$\Rightarrow \text{Passing marks} = \frac{36}{100} \times 100x = 36x$$

According to ques,

$$\Rightarrow 36x - 37 = 53$$

$$\Rightarrow 36x = 53 + 37 = 90$$

$$\Rightarrow x = \frac{90}{36} = 2.5$$

$$\therefore \text{Maximum marks} = 100 \times 2.5 = 250$$

Question 71

If $2x + 4(x - 3) < -2 - x < 2x - 1$, then find the value of x .

A -1

B 1

C 2

D -2

Answer: B

Explanation:

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

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

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

Expression 2 : $2x + 4(x - 3) < -2 - x$

$\Rightarrow 6x - 12 < -2 - x$

$\Rightarrow 6x + x < 12 - 2$

$\Rightarrow x < \frac{10}{7}$ -----(ii)

Combining inequalities (i) and (ii), we get : $\frac{-1}{3} < x < \frac{10}{7}$

Thus, only value that x can take among the options = 1

\Rightarrow Ans - (B)

Question 72

Refer the below data table and answer the following Question

	Weight (kg)	Height in Meter
Anju	68	1.74
Ankita	72	1.54
Anupama	69	1.77
Anuradha	68	1.71

Who has the least weight to height ratio?

- A Anju
- B Ankitha
- C Anupama
- D Anuradha

Answer: C

Explanation:

Ratio of weight to height

Anju : $\frac{68}{1.74} = 39.1$

Ankita : $\frac{72}{1.54} = 46.75$

Anupama : $\frac{69}{1.77} = 38.9$ **[LEAST]**

Anuradha : $\frac{68}{1.71} = 39.76$

\Rightarrow Ans - (C)

Question 73

Refer the below data table and answer the following Question.

Year	Company's % Profit
2011	15
2012	15
2013	25
2014	20
2015	10

What was the Revenue of the company if its Expenditure was Rs 475 crore in the year when its % profit was the least?

- A 570
- B 617.5
- C 475
- D 522.5

Answer: D

Explanation:

Profit % was least in 2015 = 10%

Let revenue = Rs. x crore and expenditure = Rs. 475 crore

$$\Rightarrow \text{Profit \%} = \frac{x-475}{475} \times 100 = 10$$

$$\Rightarrow \frac{x-475}{475} = \frac{10}{100} = \frac{1}{10}$$

$$\Rightarrow x - 475 = \frac{475}{10} = 47.5$$

$$\Rightarrow x = 475 + 47.5 = 522.5 \text{ crore}$$

Question 74

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

Number of Children	Number of Houses
0	6
1	17
2	17
3	3

What is the average number of children per house?

- A 1.65

B 1.9

C 1.15

D 1.4

Answer: D

Explanation:

Total number of houses = $6 + 17 + 17 + 3 = 43$

Total children = $(0 \times 6) + (1 \times 17) + (2 \times 17) + (3 \times 3)$
 $= 17 + 34 + 9 = 60$

\therefore Average number of children per house = $\frac{60}{43} = 1.4$

=> Ans - (D)

Question 75

Refer the below data table and answer the following Question.

Partners	Present % Share
Anand	10
Basu	25
Chinmay	30
Dhiraj	15
Ejaz	20

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

A 120000 shares

B 90000 shares

C 105000 shares

D 75000 shares

Answer: C

Explanation:

Total shares = Rs. 6,00,000

Original shares with Dhiraj = $\frac{15}{100} \times 600000 = 90,000$

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

=> Shares with Dhiraj = $90,000 + 15,000 = 1,05,000$

=> Ans - (C)

English

Instructions

For the following questions answer them individually

Question 76

Select the synonym of proscriptive

- A squalid
- B exiguous
- C excessive
- D thrifty

Answer: C

Question 77

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

To be deprived of a close relation or friend through their death.

- A to divest
- B to bereave
- C to oust
- D to dispossess

Answer: B

Question 78

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

To make someone feel completely baffled.

- A to perplex

B to explicate

C to construe

D to elucidate

Answer: A

Question 79

Improve the bracketed part of the sentence.

Everyday we (have usually) dinner at 8 o'clock.

A usually have

B have usual

C have had usually

D no improvement

Answer: A

Question 80

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 plane was too(A)/ far away that it was(B)/just a dot in the sky.(C)/No error(D)

A A

B B

C C

D D

Answer: A

Question 81

Select the antonym of
obligation

A bond

- B burden
- C commitment
- D irresponsibility

Answer: D

Question 82

Improve the bracketed part of the sentence.

(It is) a pleasant day, we went for a walk.

- A Having been
- B It being
- C It was
- D no improvement

Answer: B

Question 83

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

For three months, I have had a _____ headache.

- A inbred
- B settled
- C chronic
- D lifelong

Answer: C

Question 84

Select the synonym of
proximity

- A futile

- B preposterous
- C absurd
- D imminent

Answer: D

Question 85

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.

We have finished the assignment.

- A The assignment has been finished by us.
- B The assignment were finished by us.
- C The assignment had been finished by us.
- D The assignment has had been finished by us.

Answer: A

Question 86

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

When I broke my leg, it was the _____ of a nightmare week.

- A top
- B maximum
- C summit
- D climax

Answer: D

Question 87

Select the word with the correct spelling.

- A thorough

B brazened

C termynus

D adherant

Answer: B

Question 88

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'.

It was like(A)/reading a(B)/open book.(C)/No error(D)

A A

B B

C C

D D

Answer: B

Question 89

Rearrange the parts of the sentence in correct order.

Only a country not yet rid

P-of its colonial hangover

Q-and controls, labels dissent as seditious

R-of a government that commands

A PRQ

B PQR

C QPR

D RPQ

Answer: A

Question 90

Select the antonym of to lament

A to deplore

- B to bawl
- C to laud
- D to bemoan

Answer: C

Question 91

Rearrange the parts of the sentence in correct order.

Developing countries

P-should question the rationale

Q-for such a registry ahead

R-of a negotiated outcome on this issue

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

Answer: B

Question 92

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.

Mother said to you, "When will you start from Pune?"

- A Mother asked you when you would start from Pune.
- B Mother asked you when you will start from Pune.
- C Mother asked you when you will be starting from Pune.
- D Mother asked you when you will have started from Pune.

Answer: A

Question 93

Select the word with the correct spelling.

- A quaffing

- B conveynor
- C fuselag
- D bumbbling

Answer: A

Question 94

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

graveyard shift

- A to work in a very scary place
- B a place where one is forced to work so hard that it almost kills you
- C to work with a team where everybody else is very lazy
- D a work shift that runs through the early morning hours

Answer: D

Question 95

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

good Samaritan

- A a very rich but humble person
- B a person who helps others but with a hidden cause
- C a charitable or helpful person
- D a person who accepts defeat sportingly

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 second strategy proposed _____ (1) the committee was institutional reform of police processes, including investigation of crimes, professionalization and _____ (2) of court systems with induction of technology _____ (3) limiting appeal procedures to the _____ (4) required.

It is here the committee _____(5) to bring in a bigger and responsible role to victims of crime in the whole proceedings.

Question 96

(1)

A of

B by

C for

D from

Answer: B

Question 97

(2)

A rationalising

B rationalisation

C rationally

D rational

Answer: B

Question 98

(3)

A but

B because

C and

D nor

Answer: C

Question 99

(4)

A minimum

B bottom

C lower

D negligible

Answer: A

Question 100

(5)

A bought

B brought

C caught

D sought

Answer: D