

SSC CHSL 18 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. Exactly : Precisely :: Evidently : ?

- A Happily
- B Distinctly
- C Apparently
- D Hesitatingly

Answer: B

Explanation:

Exactly and precisely are synonyms meaning to be exact, thus synonym of evidently is *distinctly*.

=> Ans - (B)

Question 2

Select the related word/letters/number from the given alternatives. EGIK : VTRP :: DFHJ : ?

- A WSQU
- B WSUQ
- C WUSQ
- D WUSP

Answer: C

Explanation:

Expression = EGIK : VTRP :: DFHJ : ?

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, DFHJ : **WUSQ**

=> Ans - (C)

Question 3

Select the related word/letters/number from the given alternatives. ERASE : FSBTF :: MAGIC : ?

A NHBJD

B NBHGD

C NBJHD

D NBHJD

Answer: D

Explanation:

Expression = ERASE : FSBTF :: MAGIC : ?

The pattern followed is :

E	R	A	S	E
+1 ↓	+1 ↓	+1 ↓	+1 ↓	+1 ↓
F	S	B	T	F

Thus, MAGIC : **NBHJD**

=> Ans - (D)

Question 4

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

8 : 27 :: 9 : ?

A 31

B 30

C 17

D 32

Answer: B

Explanation:

Expression = 8 : 27 :: 9 : ?

The pattern followed is = $x : 3(x + 1)$

Eg :- $8 : 3(8 + 1) = 8 : 27$

Similarly, $3 \times (9 + 1) = 3 \times 10 = 30$

=> Ans - (B)

Question 5

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

- A Armchair
- B Sofa
- C Table
- D Paperweight

Answer: D

Explanation:

Except paper weight other three are furniture, hence it is the odd one out.

=> Ans - (D)

Question 6

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

- A JPM
- B DJG
- C BHE
- D SDA

Answer: D

Explanation:

(A) : J (+6 letters) = P (-3 letters) = M

(B) : D (+6 letters) = J (-3 letters) = G

(C) : B (+6 letters) = H (-3 letters) = E

(D) : S (+11 letters) = D (-3 letters) = A

=> Ans - (D)

Question 7

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

- A 156
- B 200

C 182

D 240

Answer: B

Explanation:

$$156 = 12^2 + 12$$

$$182 = 13^2 + 13$$

$$240 = 15^2 + 15$$

=> Ans - (B)

Question 8

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

A 462

B 297

C 674

D 891

Answer: C

Explanation:

Middle digit is sum of first and last digit, but $6 + 4 \neq 7$, hence 674 is the odd one out.

=> Ans - (C)

Question 9

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. Khilji dynasty, ? , Sayyid dynasty, Lodi dynasty

A Mughal dynasty

B Sur dynasty

C Tughlaq dynasty

D Slave dynasty

Answer: C

Explanation:

Dynasties in increasing order according to their time period.

= Khilji dynasty -> Tughlaq dynasty -> Sayyid dynasty -> Lodi dynasty

=> 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. ZBJ, YCK, XDL, ?

A VMW

B WDM

C WEM

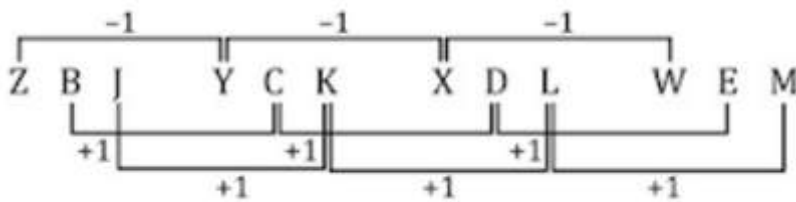
D WFM

Answer: C

Explanation:

Expression : ZBJ, YCK, XDL, ?

The pattern followed is :



Thus, missing term = **WEM**

=> Ans - (C)

Question 11

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. AT, DR, GP, JN, ?

A MJ

B MN

C MK

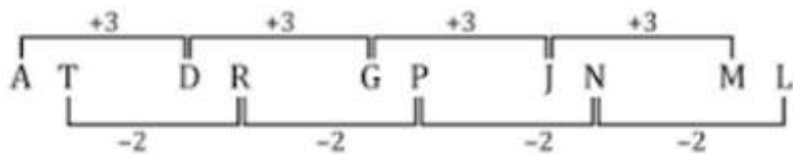
D ML

Answer: D

Explanation:

Expression : AT, DR, GP, JN, ?

The pattern followed is :



Thus, missing term = **ML**

=> Ans - (D)

Question 12

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

3, 4, 12, 48, ?

A 426

B 576

C 467

D 512

Answer: B

Explanation:

The previous number is multiplied.

$$4 \times 3 = 12$$

$$12 \times 4 = 48$$

$$48 \times 12 = 576$$

=> Ans - (B)

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.

Statements:

(I) Demand of wooden furniture has gone down in an aggregate scenario.

(II) Wooden furniture has been replaced by fiber or plastic made furniture.

Conclusion:

(I) Wooden furniture needs more maintenance and it is difficult to handle.

(II) Plastic furniture is termite free and can be easily handled.

A Only conclusion II follows

B Conclusion I and II both follow

C Neither I nor II follow

D Only conclusion I follows

Answer: B

Question 14

Amit's age is four times the age of Babli. Babli's age is three times the age of Priya. If the present age of Priya is 5 years, what is the present age (in years) of Amit?

A 65

B 45

C 55

D 60

Answer: D

Explanation:

Priya's present age = 5 years

=> Babli's present age = $3 \times 5 = 15$ years

∴ Amit's present age = $4 \times 15 = 60$ years

=> Ans - (D)

Question 15

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

i. Harmony

ii. Harness

iii. Honey

iv. Harangue

A iii,ii,i,iv

B iv,i,iii,ii

C iv,ii,i,iii

D iv,i,ii,iii

Answer: D

Explanation:

As per the order of dictionary :

= Harangue -> Harmony -> Harness -> Honey

≡ iv,i,ii,iii

=> Ans - (D)

Question 16

In a certain code language, "CUTE" is written as "9251" and "REST" is written as "4135". How is "RESCUE" written in that code language?

A 413921

B 431291

C 423911

D 413912

Answer: A

Explanation:

The codes for each letter is given :

R -> 4

E -> 1

S -> 3

C -> 9

U -> 2

E -> 1

Thus, RESCUE : **413921**

=> Ans - (A)

Question 17

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

B	A	B
C	C	D
Y	P	?

A E

B D

C J

D H

Answer: C

Explanation:

The pattern followed is that the alphabets are numbered alphabetically, A=1, B=2, C=3 and so on and then the last alphabet in each column is obtained by :

$$B=2 \text{ and } C=3, \Rightarrow (2 + 3)^2 = 25 \equiv Y$$

$$A=1 \text{ and } C=3, \Rightarrow (1 + 3)^2 = 16 \equiv P$$

$$\text{Similarly, } B=2 \text{ and } D=4, \Rightarrow (2 + 4)^2 = 36 = 26 + 10 \equiv J$$

\Rightarrow Ans - (C)

Question 18

If "A" means "subtraction", "B" means "division", "C" means "addition" and "D" means "multiplication", then $294 \text{ B } 6 \text{ A } 30 \text{ C } 31 \text{ D } 4 = ?$

A 16

B 156

C 143

D 163

Answer: C

Explanation:

Expression : $294 \text{ B } 6 \text{ A } 30 \text{ C } 31 \text{ D } 4 = ?$

$$\equiv 294 \div 6 - 30 + 31 \times 4$$

$$= \left(\frac{294}{6}\right) + (-30) + (31 \times 4)$$

$$= 49 - 30 + 124 = 143$$

\Rightarrow 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? W_YZ_X_ZW_Y_

A ZWZXX

B YWYYZ

C XWYYZ

D XWYXZ

Answer: D

Explanation:

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

= WXYZ WXYZ WXYZ

=> Ans - (D)

Question 20

Ankita travels 35 km towards the west, takes a right turn and travels 50 km more. Next, she takes another right turn and travels 35 km in that direction. How far is she now from her original position?

A 75 km

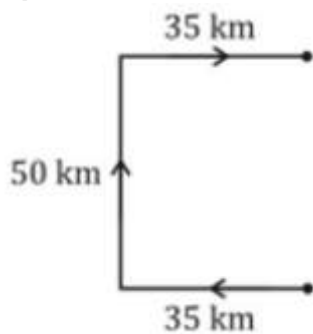
B 25 km

C 50 km

D 20 km

Answer: C

Explanation:



Ankita travels 35 km towards the west, takes a right turn and travels 50 km towards north. Finally, she takes another right turn and travels 35 km towards east.

Thus, distance between her original and final position = 50 km

=> 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, V can be represented by 21, 03, etc., and U can be represented by 96, 67, etc. Similarly, you have to identify the set for the word COME.

Matrix - I

	0	1	2	3	4
0	R	E	R	Y	E
1	A	C	M	Q	H
2	O	Y	L	C	P
3	E	V	A	P	C
4	M	E	C	Y	O

Matrix - II

	5	6	7	8	9
5	V	M	O	G	M
6	O	R	U	D	U
7	E	M	O	M	A
8	C	X	C	O	Y
9	M	U	E	S	E

A 11,44,58, 01

B 23,65,13, 77

C 85,57,12,87

D 34, 20,76,99

Answer: D

Explanation:

(A) : 11,44,58, 01 = COGE

(B) : 23,65,13, 77 = COQO

(C) : 85,57,12,87 = COMC

(D) : 34, 20,76,99 = **COME**

=> Ans - (D)

Question 22

Introducing a boy, a man says, "He is the son of the brother of my grandfather's son." How is the boy related to the man?

A Brother

B Grandfather

C Nephew

D Cousin

Answer: D

Explanation:

The man's grandfather's son = man's father

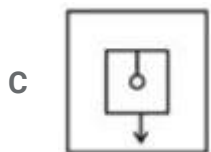
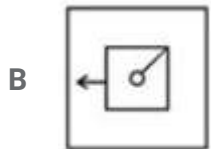
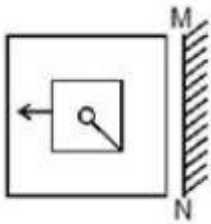
Brother of his father = his uncle

Now, the boy is the son of his uncle, thus they are cousins

=> Ans - (D)

Question 23

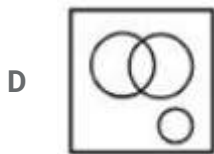
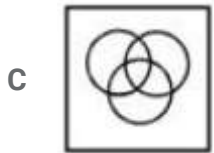
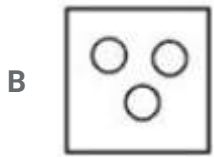
If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?



Answer: A

Question 24

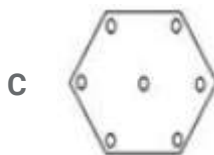
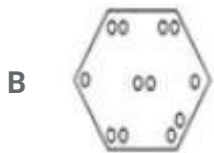
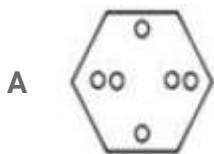
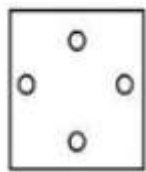
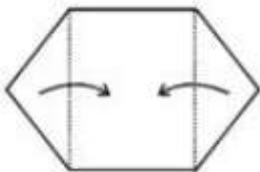
Identify the diagram that best represents the relationship among the given classes. Biosphere, Hydrosphere, Atmosphere

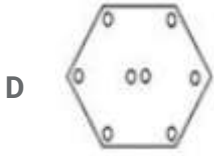


Answer: A

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: A

General Awareness

Instructions

For the following questions answer them individually

Question 26

Which temple is built in the form of the chariot of Surya, the Sun God with 24 wheels?

- A Soorya Narayana Temple
- B Dakshinaraka Temple
- C Surya Pahar Temple
- D Konark Sun Temple

Answer: D

Question 27

Kangana Ranaut has won how many National awards?

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

Answer: B

Question 28

Vitamin A is also known as

- A Thiamine

- B** Riboflavin
- C** Retinol
- D** Calciferol

Answer: C

Question 29

Some roots, called, arise from an organ other than the radicle.

- A** tap roots
- B** stilt roots
- C** fibrous roots
- D** adventitious roots

Answer: D

Question 30

Spiders belong to which class of animals?

- A** Arachnids
- B** Aves
- C** Gastropods
- D** Anthozoa

Answer: A

Question 31

Which of the following elements has the lowest melting point?

- A** Bromine
- B** Zinc
- C** Lead
- D** Calcium

Answer: A

Question 32

Ethane gas has a slightlytaste.

- A** sweet
- B** bitter
- C** sour
- D** salty

Answer: A

Question 33

ROM in computer science stands for?

- A** Random Only Memory
- B** Read Out Memory
- C** Read Only Memory
- D** Rotation Only Memory

Answer: C

Question 34

Which among the following is not a folk dance form of Kerala?

- A** Kathakali
- B** Thullal
- C** Kaikottikali
- D** Chappeli

Answer: D

Question 35

The minimum price at which I was willing to sell my old TV was Rs 37,000. I quoted Rs 50,000 while selling it, but it sold for Rs 42,000. This transaction generated

- A Rs 5000 worth of consumer surplus
- B Rs 8000 worth of consumer surplus
- C Rs 5000 worth of producer surplus
- D Rs 8000 worth of producer surplus

Answer: C

Question 36

.....is a good whose quantity demanded decreases when consumer income rises.

- A Veblen good
- B normal good
- C exclusive good
- D inferior good

Answer: D

Question 37

Which of the following processes is responsible for causing rain?

- A Filtration
- B Evaporation and Condensation
- C Evaporation
- D Condensation

Answer: B

Question 38

Manas National Park is in which state?

- A Orissa
- B Maharashtra
- C Assam

D Sikkim

Answer: C

Question 39

Who sang the song "Jag Ghoomeya" from the Movie Sultan?

A Sonu Nigam

B Shaan

C Rahat Fateh Ali Khan

D Arijit

Answer: C

Question 40

Marble is a metamorphic rock of

A Sandstone

B Limestone

C Granite

D Clay

Answer: B

Question 41

Which city is located on the banks of the river Chambal?

A Ahmedabad

B Ayodhya

C Badrinath

D Kota

Answer: D

Question 42

The battle of Tarain was fought between Prithviraj Chauhan and

- A** Mahmood Gaznabi
- B** Muhammad Ghori
- C** Babar
- D** Humayun

Answer: B

Question 43

World War II started in the year?

- A** 1914
- B** 1919
- C** 1939
- D** 1945

Answer: C

Question 44

ISRO built India's first satellite known as

- A** Aryabhata
- B** Bhaskara
- C** Rohini
- D** Insat 1A

Answer: A

Question 45

The value of acceleration due to gravity (g) at a distance of $2R$ from the surface of earth, where R is the radius of earth is

- A $g/3$
- B $g/4$
- C $g/9$
- D $g/2$

Answer: C

Question 46

The unit of which physical quantity is not pascal?

- A Moment of inertia
- B Pressure
- C Stress
- D Young's modulus

Answer: A

Question 47

What is the full form of the Indian Political Party, "AITC"?

- A All India Trinamool Congress
- B All India Telugu Congress
- C All India Telugu Communist
- D All India Trinamool Communist

Answer: A

Question 48

The number of parliamentary seats (Rajya Sabha) of Karnataka is

A 12

B 16

C 18

D 31

Answer: A

Question 49

Apurvi Chandela is related to

A Boxing

B Archery

C Swimming

D Shooting

Answer: D

Question 50

Who wrote the book "The Broken Wing"?

A APJ Abdul Kalam

B Kiran Bedi

C Sarojini Naidu

D Premchand

Answer: C

English

Instructions

For the following questions answer them individually

Question 51

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.

Ravi had committed a mistake.

- A A mistake has been committed by Ravi.
- B A mistake had been committed by Ravi.
- C A mistake was committed by Ravi.
- D A mistake is committed by Ravi.

Answer: B

Question 52

Select the word with the correct spelling.

- A comands
- B prigish
- C adhesive
- D serenly

Answer: C

Question 53

Select the antonym of endeavour

- A passive
- B buck
- C assay
- D intend

Answer: A

Question 54

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

To understand the nature of electromagnetic radiation, it is imperative that we grasp thenature of light.

- A twice
- B dual
- C double
- D dichotomous

Answer: B

Question 55

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

To put the cat among the pigeons

- A To hunt easy prey
- B To be different in a group where everybody is alike
- C To do something that is likely to cause controversy
- D When the entire group feels trapped in a bad situation

Answer: C

Question 56

Rearrange the parts of the sentence in correct order.

He spent a third

Pwas of any consequence

Qmade sure that none of them

Rof the time describing his tax proposals, but

- A QRP
- B QPR
- C PRQ

D RQP

Answer: D

Question 57

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

The temple is(A)/within a hundred yards(B)/from my house(C)/No error(D)

A A

B B

C C

D D

Answer: D

Question 58

Select the synonym of to moan

A to sigh

B to beam

C to smirk

D to simper

Answer: A

Question 59

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

deserving reward or praise

A meritorious

B honourable

C virtuous

D noble

Answer: A

Question 60

Improve the bracketed part of the sentence.

The candidate was likely to win the assembly elections (with the) sweeping majority.

- A** by the
- B** with a
- C** by a
- D** no improvement

Answer: C

Question 61

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 certain that(A)/the officer is not only(B)/greedy but corrupt.(C)/No error(D)

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

Answer: C

Question 62

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.

'Do you have anything to tell me, little princess?' asked the king.

- A** The king ask the little princess if she have anything to tell him.
- B** The king asked the little princess that if she had anything to tell him.
- C** The king said to the little princess if she had anything to say to him.
- D** The king asked the little princess whether she had anything to tell him.

Answer: D

Question 63

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

involving or showing violence and bloodshed

A inundate

B gory

C sanguine

D imbrue

Answer: B

Question 64

Select the antonym of beleaguer

A gnaw

B assist

C badger

D pester

Answer: B

Question 65

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 special court waswithout having reached any decision on the case.

A adjourned

B dispersed

C postponed

D recessed

Answer: A

Question 66

Select the word with the correct spelling.

- A bloting
- B terrazo
- C gulible
- D pyroxene

Answer: D

Question 67

Select the synonym of melodramatic

- A tranquil
- B halcyon
- C bucolic
- D theatrical

Answer: D

Question 68

Rearrange the parts of the sentence in correct order.

**The yatra focussed Pfor poor and Qmarginalised communities
Ron access to development and dignity**

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

Answer: C

Question 69

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

to shoot the breeze

- A To do random acts hoping one will be successful
- B To have a casual conversation
- C To release stomach gases
- D To brag about some mild achievement

Answer: B

Question 70

Improve the bracketed part of the sentence.

It was hard to believe that she (were) dead for three months.

- A was
- B has been
- C is
- D no improvement

Answer: B

Instructions

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.

.....(1).....being an intangible idea, the nation is quite real because it is a shared idea.(2).....of nationhood are important for this sharing to be reliably reproduced, which is why we have familiar(3).....to memory like maps, flags, or the figure of Mother India. National symbols are extremely powerful(4).....they connect to compressed reservoirs of intense(5).....

Question 71

(1)

- A In spite
- B Although

C Despite of

D Despite

Answer: D

Question 72

(2)

A Symbols

B Badges

C Emblems

D Figures

Answer: A

Question 73

(3)

A assistance

B aids

C help

D support

Answer: B

Question 74

(4)

A since

B because

C so

D thereof

Answer: B

Question 75

(5)

A compassion

B empathy

C emotion

D elation

Answer: C

Mathematics

Instructions

For the following questions answer them individually

Question 76

A factory buys 10 machines. 1 MachineA, 4 MachineB and rest MachineC. Prices of the machines are Rs 90000, Rs 40000 and Rs 40000 respectively. Calculate the average cost of these machines?

A 56666.6

B 68333.3

C 45000

D 43500

Answer: C

Explanation:

Cost of machines A, B and C respectively are : Rs. 90000 , 40000 and 40000

Number of machines A, B and C respectively are : 1 , 4 , 5

$$\Rightarrow \text{Total cost} = (1 \times 90000) + (4 \times 40000) + (5 \times 40000)$$

$$= 90,000 + 160,000 + 200,000 = \text{Rs. } 450,000$$

$$\therefore \text{Average cost} = \frac{450,000}{10} = \text{Rs. } 45,000$$

\Rightarrow Ans - (C)

Question 77

The reciprocal of the sum of the reciprocals of $\frac{8}{7}$ and $\frac{5}{6}$ is:

A $\frac{83}{40}$

B $\frac{42}{83}$

C $\frac{83}{42}$

D $\frac{40}{83}$

Answer: D

Explanation:

Sum of the reciprocals of $\frac{8}{7}$ and $\frac{5}{6}$

$$= \frac{7}{8} + \frac{6}{5}$$

$$= \frac{7(5)+6(8)}{40} = \frac{35+48}{40}$$

$$= \frac{83}{40}$$

$$\Rightarrow \text{Reciprocal of } \frac{83}{40} = \frac{40}{83}$$

\Rightarrow Ans - (D)

Question 78

If $3x - 2(4 - 3x) < 2x - 5 < 3x + 3$; then the value of x is

A 1

B 2

C 5

D 0

Answer: D

Explanation:

Expression 1 : $3x - 2(4 - 3x) < 2x - 5$

$$\Rightarrow 3x - 8 + 6x < 2x - 5$$

$$\Rightarrow 9x - 2x < 8 - 5$$

$$\Rightarrow 7x < 3$$

$$\Rightarrow x < \frac{3}{7} \text{ -----(i)}$$

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

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

$$\Rightarrow x > -8 \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $-8 < x < \frac{3}{7}$

The only value that x can take among the options = 0

\Rightarrow Ans - (D)

Question 79

Simplify $(b^2 x^3 a^2 z^4) \times (b^2 x^4 a^4 z^3 / (a^3 b^2 z^4))$

A $b^2 x^7 a^3 z^3$

B $b^3 x^7 a^3 z^3$

C $b^2 x^5 a^3 z^3$

D $b^2 x^7 a^3 z^2$

Answer: A

Explanation:

Expression : $(b^2 x^3 a^2 z^4) \times (b^2 x^4 a^4 z^3 / (a^3 b^2 z^4))$

$$= [(b)^{2+2} (x)^{3+4} (a)^{2+4} (z)^{4+3}] \div [a^3 b^2 z^4]$$

$$= (b^4 x^7 a^6 z^7) \div (a^3 b^2 z^4)$$

$$= (b)^{4-2} (x)^7 (a)^{6-3} (z)^{7-4}$$

$$= b^2 x^7 a^3 z^3$$

\Rightarrow Ans - (A)

Question 80

A sum fetched a total simple interest of Rs. 9648 at the rate of 12% per year in 6 years. What is the sum?

A Rs 16080

B Rs 10720

C Rs 8040

D Rs 13400

Answer: D

Explanation:

Let the sum = $Rs. 100x$

Rate = 12% under simple interest and time = 6 years

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

$$\Rightarrow \frac{100x \times 12 \times 6}{100} = 9648$$

$$\Rightarrow 72x = 9648$$

$$\Rightarrow x = \frac{9648}{72} = 134$$

$$\therefore \text{Sum} = 100 \times 134 = \text{Rs } 13,400$$

\Rightarrow Ans - (D)

Question 81

A shopkeeper, sold dried apricots at the rate Rs 1,310 a kg and bears a loss of 13%. Now if he decides to sell it at Rs 1,441 per kg, what will be the result?

A 8.6 percent loss

B 4.3 percent gain

C 4.3 percent loss

D 8.6 percent gain

Answer: C

Explanation:

Let Cost price = Rs. x

Selling price = Rs. 1310

$$\Rightarrow \text{Loss \%} = \frac{x-1310}{x} \times 100 = 13$$

$$\Rightarrow \frac{x-1310}{x} = \frac{13}{100}$$

$$\Rightarrow 100x - 131000 = 13x$$

$$\Rightarrow 100x - 13x = 131000$$

$$\Rightarrow x = \frac{131000}{87} = \text{Rs } 1505.75$$

If selling price = Rs. 1441

$$\Rightarrow \text{Loss \%} = \frac{1505.75-1441}{1505.75} \times 100$$

$$= \frac{6475}{1505.75} = 4.3\%$$

\Rightarrow Ans - (C)

Question 82

If $\cos 240^\circ = x$, then value of x is

A $-1/\sqrt{2}$

B $\sqrt{3}/2$

C $1/2$

D $-1/2$

Answer: D

Explanation:

Expression : $\cos 240^\circ = x$

$$= \cos(180 + 60)$$

$$= -\cos(60)$$

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

=> Ans - (D)

Question 83

3 hrs after a goods train passed a station, another train travelling at a speed of 88 km/hr following that goods train passed through that station. If after passing the station the train overtakes the goods train in 8 hours. What is the speed of the goods train?

A 76.8 km/hr

B 64 km/hr

C 96 km/hr

D 51.2 km/hr

Answer: B

Explanation:

Let the speed of goods train = x km/hr

Speed of another train = 88 km/hr

Distance between the two trains = $88 \times 3 = 264$ km

The trains are moving in same direction, => Relative speed = $(88 - x)$ km/hr

Time = $3 + 8 = 11$ hours

=> speed = distance/time

$$\Rightarrow 88 - x = \frac{264}{11} = 24$$

$$\Rightarrow x = 88 - 24 = 64 \text{ km/hr}$$

=> Ans - (B)

Question 84

If $a + b = 9$ and $a^2 + b^2 = 61$, then ab is

A 20

B 10

C 81

D 142

Answer: B

Explanation:

Given : $(a + b) = 9$ and $a^2 + b^2 = 61$

Using $(a + b)^2 = a^2 + b^2 + 2ab$

$$\Rightarrow (9)^2 = 61 + (2 \times ab)$$

$$\Rightarrow 2ab = 81 - 61 = 20$$

$$\Rightarrow ab = \frac{20}{2} = 10$$

\Rightarrow Ans - (B)

Question 85

Reflection of the point (2,5) in the x axis is

A (2,5)

B (-2,-5)

C (-2,5)

D (-
2,-5)

Answer: D

Explanation:

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

\Rightarrow Reflection of point (2,5) = (2,-5)

\Rightarrow Ans - (D)

Question 86

The price of an article is discounted by 25%, to restore to its original value, the new price must be increased by

- A 57 percent
- B 36.31 percent
- C 71.25 percent
- D 33.33 percent

Answer: D

Explanation:

Let the original price of the article = Rs. 100

If the price is cut by 25%, => New price = $\frac{100-25}{100} \times 100 = Rs.75$

To restore to its original value the new price must be increased by = $\frac{100-75}{75} \times 100$

$$= \frac{100}{3} = 33.33\%$$

=> Ans - (D)

Question 87

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

- A $\cos A$
- B $\sin A$
- C $\operatorname{cosec} A$
- D $\sec A$

Answer: A

Explanation:

Expression : $1/\sqrt{1+\tan^2 A} = x$

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

$$= \frac{1}{\sqrt{\sec^2 A}}$$

$$= \frac{1}{\sec A} = \cos A$$

=> Ans - (A)

Question 88

20% discount is offered on an item. By applying a promo code the customer wins 5% cash back. What is the effective discount?

- A 24 percent
- B 25.2 percent

C 25 percent

D 6 percent

Answer: A

Explanation:

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

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

$$\begin{aligned}\text{Selling price after 5 \% cashback} &= 80x - \frac{5}{100} \times 80x \\ &= 80x - 4x = \text{Rs. } 76x\end{aligned}$$

$$\Rightarrow \text{Total discounted amount} = 100x - 76x = \text{Rs. } 24x$$

$$\therefore \text{Effective discount} = \frac{24x}{100x} \times 100 = 24\%$$

\Rightarrow Ans - (A)

Question 89

A wooden bowl is in shape of a hollow hemisphere of internal radius 8 cm and thickness 1 cm. Find the total surface area of the bowl?

A 964.85 sq cms

B 1125.14 sq cms

C 1687.71 sq cms

D 281.29 sq cms

Answer: A

Explanation:

The hemispherical bowl has three surfaces to calculate : the interior hemisphere ($r_{int} = 8$) cm , the exterior hemisphere ($r_{ext} = 8 + 1 = 9$) cm and the annular(ring shaped) top edge (r_{ext}, r_{int})

$$\text{Area of hemisphere} = 2\pi r^2 \text{ and area of annular} = \pi(r_{ext}^2 - r_{int}^2)$$

Total surface area of hemisphere is the sum of these 3 areas

$$= [2\pi(8)^2] + [2\pi(9)^2] + [\pi(9^2 - 8^2)]$$

$$= \pi[(2 \times 64) + (2 \times 81) + (81 - 64)]$$

$$= \pi(128 + 162 + 17) = 307\pi$$

$$= 307 \times \frac{22}{7} = 964.85 \text{ cm}^2$$

=> Ans - (A)

Question 90

If $6A = 7B = 5C$; find $A : B : C$

A 42:30:35

B 30:35:42

C 5:7:6

D 35:30:42

Answer: D

Explanation:

Let $6A = 7B = 5C = k$

$$\Rightarrow A = \frac{k}{6}, B = \frac{k}{7}, C = \frac{k}{5}$$

$$\Rightarrow \text{Ratio of } A : B : C = \frac{k}{6} : \frac{k}{7} : \frac{k}{5}$$

$$= \frac{1}{6} : \frac{1}{7} : \frac{1}{5}$$

L.C.M. of 5,6 and 7 = 210, thus multiplying by 210, we get :

$$= \frac{210}{6} : \frac{210}{7} : \frac{210}{5}$$

$$= 35 : 30 : 42$$

=> Ans - (D)

Question 91

Abhinav is 2 times as good a workman as Balwant and therefore is able to finish a job in 36 days less than Balwant. Working together, they can do it in

A 12 days

B 6 days

C 18 days

D 24 days

Answer: D

Explanation:

Ratio of times taken by Abhinav and Balwant = 1 : 2

The time difference is (2 - 1) 1 day while Balwant take 2 days and Abhinav takes 1 day.

If difference of time is 1 day, Balwant takes 2 days.

If difference of time is 36 days, Balwant takes = $\frac{2}{1} \times 36 = 72$ days

So, Abhinav takes 36 days

$$\text{Abhinav's 1 day's work} = \frac{1}{36}$$

$$\text{Balwant's 1 day's work} = \frac{1}{72}$$

$$(\text{Abhinav} + \text{Balwant})\text{'s 1 day's work together} = \frac{1}{36} + \frac{1}{72} = \frac{3}{72} = \frac{1}{24}$$

\therefore Abhinav and Balwant together can do the work in = 24 days

=> Ans - (D)

Question 92

The first and last terms of an arithmetic progression are -23 and 42. What is the sum of the series if it has 14 terms?

A 91

B 133

C 93

D -133

Answer: B

Explanation:

In an arithmetic progression with first term, $a = -23$, last term, $l = 42$

Number of terms = $n = 14$

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

$$= \frac{14}{2}(-23 + 42)$$

$$= 7 \times 19 = 133$$

=> Ans - (B)

Question 93

What is the equation of the line passing through the point (0,4) and making an angle of 45° with the positive x axis?

A $x + y = 4$

B $x - y = 4$

C $x + y = -4$

D $x - y = -4$

Answer: D

Explanation:

Slope of line making an angle of 45° with the positive x-axis = $\tan(45^\circ)$

=> Slope, $m = 1$

Line is passing through point (0,4)

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

=> $(y - 4) = 1(x - 0)$

=> $y - 4 = x$

=> $x - y = -4$

=> Ans - (D)

Question 94

In a Rhombus ABCD, measure of angle CAB is 30° , what is the measure of angle ABC?

A 60°

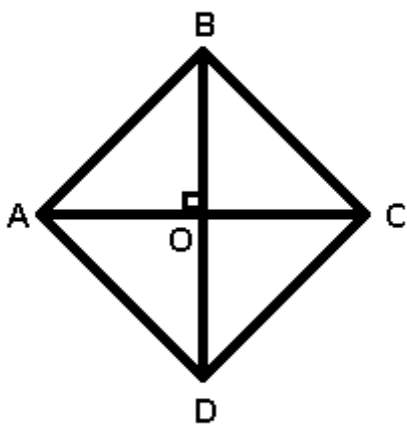
B 120°

C 90°

D 150°

Answer: B

Explanation:



Given : ABCD is a rhombus and $\angle CAB = 30^\circ$

To find : $\angle ABC = ?$

Solution : Diagonals of a rhombus bisect each other at 90° and also bisect the angles of the rhombus.

In $\triangle AOB$

=> $\angle AOB + \angle OBA + \angle BAO = 180^\circ$

=> $90^\circ + 30^\circ + \angle OBA = 180^\circ$

$$\Rightarrow \angle OBA = 180^\circ - 120^\circ = 60^\circ$$

$$\therefore \angle ABC = 2 \times \angle OBA$$

$$= 2 \times 60 = 120^\circ$$

\Rightarrow Ans - (B)

Question 95

In which of the following quadrilaterals only one pair of opposite angles is supplementary?

A Isosceles Trapezium

B Parallelogram

C Cyclic quadrilateral

D Rectangle

Answer: C

Explanation:

In rectangle, all angles are 90° and in a parallelogram, adjacent angles are supplementary while in a cyclic quadrilateral only one pair of opposite angles is supplementary.

\Rightarrow Ans - (C)

Question 96

What is the value of $\sqrt{\frac{1 + \sin A}{1 - \sin A}}$?

A $\sec A - \tan A$

B $\operatorname{cosec} A + \tan A$

C $\sec A + \tan A$

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

Answer: C

Explanation:

$$\text{Expression : } \sqrt{\left[\frac{1 + \sin A}{1 - \sin A}\right]}$$

Multiplying both numerator and denominator by $(\sqrt{1 + \sin A})$

$$= \sqrt{\left[\frac{1 + \sin A}{1 - \sin A}\right]} \times \sqrt{\frac{1 + \sin A}{1 + \sin A}}$$

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

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

$$= \sec A + \tan A$$

=> Ans - (C)

Question 97

Refer the below data table and answer the following question.

	Boys	Girls
Medical	25	70
Engineering	75	35

What percent students who chose Engineering are girls ?

A 17.07

B 33.33

C 46.67

D 31.82

Answer: D

Explanation:

Number of girls who chose engineering = 35

Total number of engineers = 75 + 35 = 110

=> Percent of the girls who choose engineering = $\frac{35}{110} \times 100$

$$= \frac{350}{11} \approx 31.82\%$$

=> Ans - (D)

Question 98

Refer the below data table and answer the following question.

	Cumulative Production
January	600
February	1200
March	1900
April	2310
May	2860
June	3210

How many cars were manufactured in the month of April and May ?

- A 1110
- B 900
- C 960
- D 5170

Answer: C

Explanation:

Number of cars produced in :

January = 600

February = 1200 - 600 = 600

March = 1900 - 1200 = 700

April = 2310 - 1900 = 410

May = 2860 - 2310 = 550

June = 3210 - 2860 = 350

=> Number of cars that were manufactured in the month of the April and may = 410 + 550 = 960

=> Ans - (C)

Question 99

Refer the below data table and answer the following question.

Day of the Week	Distance Jogged (in Kms)
Monday	0.5
Tuesday	3
Wednesday	0.5
Thursday	2.5
Friday	2
Saturday	3.5
Sunday	1

If 400 calories are burned by jogging 5km, how many calories were burnt in the given week?

- A 990 calories
- B 1090 calories
- C 1040 calories
- D 940 calories

Answer: C

Explanation:

Total distance jogged in entire week

$$= 0.5 + 3 + 0.5 + 2.5 + 2 + 3.5 + 1 = 13 \text{ km}$$

Calories burned after jogging 5 km = 400 calories

$$\Rightarrow \text{Calories burned after jogging 13 km} = \frac{400}{5} \times 13$$

$$= 80 \times 13 = 1040 \text{ calories}$$

\Rightarrow Ans - (C)

Question 100

Refer the below data table and answer the following question.

Items	Yearly Expense in Rs lakhs
Raw Materials	9
Labour	7
Rent	4
Interest	3
Taxes	3

Labour and Taxes are what percent of total expenses?

A 45.71 percent

B 31.21 percent

C 23.96 percent

D 38.46 percent

Answer: D

Explanation:

Yearly expense in labour and taxes (in lakhs) = 7 + 3 = 10

Total expenses (in lakhs) = 9 + 7 + 4 + 3 + 3 = 26

$$\Rightarrow \text{Required \%} = \frac{10}{26} \times 100$$

$$= \frac{500}{13} \approx 38.46\%$$

\Rightarrow Ans - (D)

SSC CHSL 18 Jan 2017 Afternoon Shift

Reasoning

Instructions

For the following questions answer them individually

Question 1

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

Gloomy : Dull :: Merciless : ?

A Sympathetic

B Calm

C Flexible

D Harsh

Answer: D

Explanation:

Gloomy and dull are synonyms meaning dim, thus synonym of merciless is *harsh*.

=> Ans - (D)

Question 2

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

HI : MD :: UV : ?

A YR

B WS

C ZQ

D ER

Answer: C

Explanation:

Expression = HI : MD :: UV : ?

The pattern followed is :



Thus, UV : ZQ

=> Ans - (C)

Question 3

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

JK : TV :: OP : ?

A DF

B WV

C ST

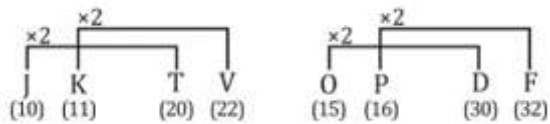
D QR

Answer: A

Explanation:

Expression = JK : TV :: OP : ?

The pattern followed is :



Thus, OP : DF

=> Ans - (A)

Question 4

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

76 : 42 :: 46 : ?

A 52

B 24

C 36

D 64

Answer: B

Explanation:

Expression = 76 : 42 :: 46 : ?

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

Eg :- $7 \times 6 = 42$

Similarly, $4 \times 6 = 24$

=> Ans - (B)

Question 5

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

- A Tuberculosis
- B Chikungunya
- C Malaria
- D Dengue

Answer: A

Explanation:

Chikungunya, Malaria, dengue, are three types of mosquito-borne diseases, hence tuberculosis is the odd one out.

=> Ans - (A)

Question 6

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

- A FHG
- B NOP
- C TVU
- D WYX

Answer: B

Explanation:

(A) : F (+2 letters) = H (-1 letter) = G

(B) : N (+1 letter) = O (+1 letter) = P

(C) : T (+2 letters) = V (-1 letter) = U

(D) : W (+2 letters) = Y (-1 letter) = X

=> Ans - (B)

Question 7

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

- A 8715

B 5712

C 9817

D 6812

Answer: D

Explanation:

The sum of first two digits is equal to the last two digits, but $6 + 8 \neq 12$, hence 6812 is the odd one out.

=> Ans - (D)

Question 8

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

A 961

B 443

C 361

D 289

Answer: B

Explanation:

$$961 = (31)^2, 361 = (19)^2, 289 = (17)^2$$

443 is not a perfect square, hence it 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. Core, Photosphere, Chromosphere, ?

A Mantle

B Corona

C Crust

D Asthenosphere

Answer: B

Explanation:

Layers of the solar atmosphere.

= Core -> Photosphere -> Chromosphere -> Corona

=> Ans - (B)

Question 10

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. BDE, HJK, NPQ, ?

A UWX

B TVW

C VXY

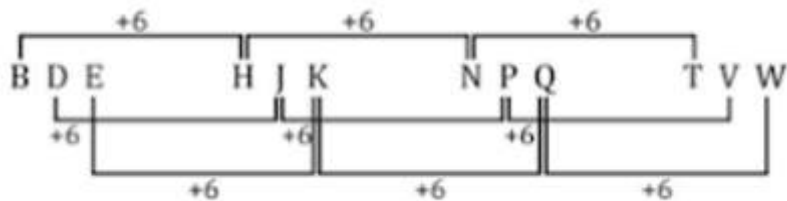
D WYZ

Answer: B

Explanation:

Expression : BDE, HJK, NPQ, ?

The pattern followed is :



Thus, missing term = TVW

=> Ans - (B)

Question 11

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. RQ, ST, VU, WX, ?

A ZY

B OP

C YZ

D PO

Answer: A

Explanation:

Expression : RQ, ST, VU, WX, ?

Alternate pair of alphabets reversed.

QR -> RQ

UV -> VU

YZ -> ZY

=> 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.

9, 1331, 18, 121, 27, ?

A 19

B 11

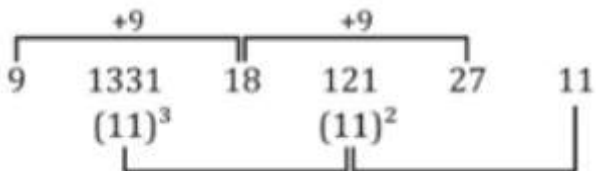
C 17

D 13

Answer: B

Explanation:

The pattern followed is for the alternate terms is :



Thus, missing number = 11

=> Ans - (B)

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.

Statements:

(I) Most crops are machines.

(II) Some machines are fools.

Conclusion:

(I) Some fools are machines.

(II) Some crops are fools.

A Conclusion I follows

B Conclusion II follows

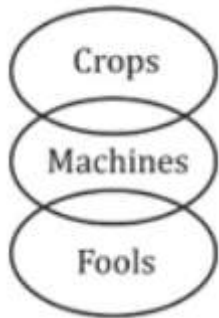
C Neither I nor II follows

D Both I and II follows

Answer: A

Explanation:

The venn diagram for above statements is :



Conclusion:

(I) Some fools are machines = true

(II) Some crops are fools = false

Thus, only conclusion I follows

=> Ans - (A)

Question 14

The age of Ravi is twice the age of Prakash and three times the age of Kumar. If the age of Prakash is 24 years, then what will be the age of Kumar after 4 years ?

A 16 years

B 20 years

C 24 years

D 22 years

Answer: B

Explanation:

Prakash's present age = 24 years

=> Ravi's present age = $2 \times 24 = 48$ years

=> Kumar's present age = $\frac{48}{3} = 16$ years

∴ Kumar's age after 4 years = $16 + 4 = 20$ years

=> Ans - (B)

Question 15

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

- i. Optimistic
- ii. Opposition
- iii. Organization
- iv. Ordinary

A ii, i, iii, iv

B iv, iii, ii, i

C ii, i, iv, iii

D i, ii, iii, iv

Answer: C

Explanation:

As per the order of dictionary :

= Opposition -> Optimistic -> Ordinary -> Organization

≡ ii, i, iv, iii

=> Ans - (C)

Question 16

In a certain code language, "MOTHER" is written as "NPUGDQ". How is "ORANGE" written in that code language ?

A PSBMDF

B PSBMFD

C PBSMFD

D PSBDMF

Answer: B

Explanation:

"MOTHER" is written as "NPUGDQ"

The pattern followed is :

M	O	T	H	E	R
+1↓	+1↓	+1↓	+1↑	+1↑	+1↑
N	P	U	G	D	Q

Similarly, for ORANGE :

$$\begin{array}{cccccc}
 \text{O} & \text{R} & \text{A} & \text{N} & \text{G} & \text{E} \\
 +1 \downarrow & +1 \downarrow & +1 \downarrow & +1 \uparrow & +1 \uparrow & +1 \uparrow \\
 \text{P} & \text{S} & \text{B} & \text{M} & \text{F} & \text{D}
 \end{array}$$

=> Ans - (B)

Question 17

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

289	10	7
169	?	5
361	11	8

A 9

B 8

C 16

D 14

Answer: B

Explanation:

In each row, the first number is the square of the sum of other two.

$$\text{Eg :- } (10 + 7)^2 = 17^2 = 289$$

$$(11 + 8)^2 = 19^2 = 361$$

$$\text{Similarly, } (x + 5)^2 = 169 = (13)^2$$

$$\Rightarrow x = 13 - 5 = 8$$

=> Ans - (B)

Question 18

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

$$12 \text{ V } 3 \text{ M } 441 \text{ L } 21 \text{ S } 8 = ?$$

A 661

B 170

C 174

D 177

Answer: D

Explanation:

Expression : $12 \div 3 + 441 \div 21 \times 8 = ?$

$$\equiv 12 \div 3 + 441 \div 21 \times 8$$

$$= 9 + (21 \times 8)$$

$$= 9 + 168 = 177$$

=> Ans - (D)

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 ? LM_L_NL_N_M_

A NNNLL

B NMMLN

C LMLMN

D NMLMM

Answer: B

Explanation:

The pattern followed is that in groups of 3, the term 'LMN' is repeated.

= LMN LMN LMN LMN

=> Ans - (B)

Question 20

It is 10:30 by the clock. If the minute hand points towards the south direction, then which direction will the hour hand point to ?

A Southwest

B Northwest

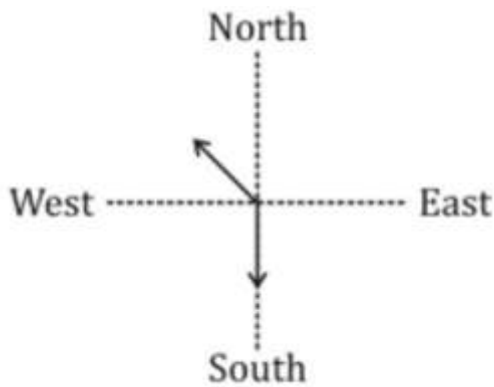
C Northeast

D Southeast

Answer: B

Explanation:

At 10:30, the clock will look like :



Minute hand points towards the south direction, and thus the hour hand will point at North-west direction.

=> Ans - (B)

Question 21

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example, D can be represented by 24, 13, etc., and R can be represented by 68, 69, etc. Similarly, you have to identify the set for the word TIGHT.

Matrix - I

	0	1	2	3	4
0	E	G	D	T	I
1	C	E	A	D	I
2	D	T	D	A	E
3	I	H	C	E	A
4	T	I	H	C	E

Matrix - II

	5	6	7	8	9
5	G	L	B	H	S
6	S	Y	L	R	R
7	J	H	Y	L	Q
8	J	Q	S	Y	T
9	H	K	G	S	Y

A 40, 30, 21, 55, 11

B 89, 14, 76, 13, 89

C 21, 04, 55, 89, 03

D 03, 41, 97, 76, 40

Answer: D

Explanation:

(A) : 40, 30, 21, 55, 11 = TITGE

(B) : 89, 14, 76, 13, 89 = TIHDT

(C) : 21, 04, 55, 89, 03 = TIGTT

(D) : 03, 41, 97, 76, 40 = **TIGHT**

=> Ans - (D)

Question 22

Pointing towards a boy, a girl says, "He is the only son of my mother's brother". How is the girl related to the boy ?

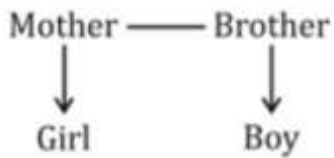
- A Grandmother
- B Mother
- C Cousin
- D Aunt

Answer: C

Explanation:

The girl's mother's brother = girl's uncle

Relation is :

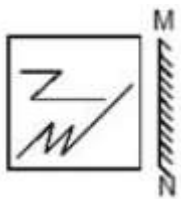


Thus, son of girl's uncle is her cousin.

=> 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 ?

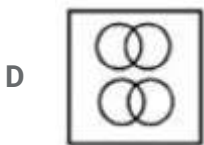
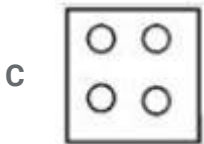
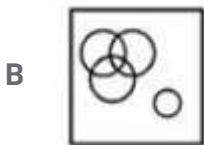
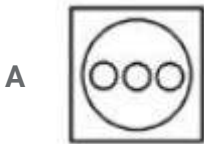




Answer: D

Question 24

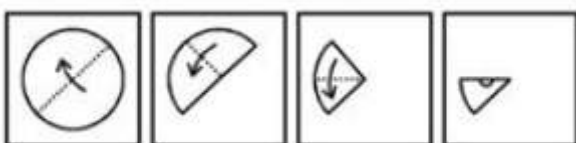
Identify the diagram that best represents the relationship among the given classes. Festival, Durga Puja, Diwali, Eid

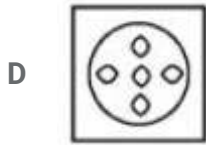
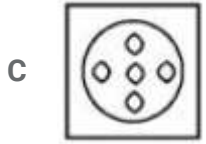
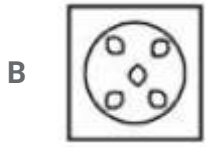
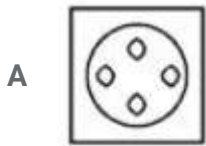


Answer: A

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: A

General Awareness

Instructions

For the following questions answer them individually

Question 26

Isfahan, the Persian Capital is said to have provided the inspiration to build which of these monuments?

- A Humayun's Tomb
- B Mahabodhi Temple Complex
- C Qutub Minar
- D Red Fort Complex

Answer: D

Question 27

Which one of the following is the name of Nobel Prize winning Indian?

- A Vikram Sarabhai
- B APJ Abdul Kalam
- C S. Pancharatnam
- D C.V. Raman

Answer: D

Question 28

How many layers does Human Skin have?

- A 5
- B 7
- C 11
- D 3

Answer: D

Question 29

Allium Cepa is the scientific name of

- A Carrot
- B Tomato
- C Potato
- D Onion

Answer: D

Question 30

DNA stands for

- A Di Nucleic Acid
- B Deoxy Nucleic Acid
- C Diribonucleic Acid

D Deoxyribonucleic Acid

Answer: D

Question 31

Which among the following is false about natural rubber?

A It is an elastomer

B It is a monomer of cisisoprene

C Natural rubber is a polymer of chloroprene

D It is heated with sulphur compounds to improve its properties

Answer: B

Question 32

Why does carbon tetrachloride have no dipole moment?

A Because of same size of carbon and chlorine atoms

B Because of regular tetrahedral structure

C Because of planar structure

D Because of similar electron affinities of carbon and chlorine

Answer: B

Question 33

Convert decimal number 101 to binary.

A 1100101

B 1100111

C 1101001

D 1101011

Answer: A

Question 34

'Vallam Kali Boat Race' is held in which state?

- A Kerala
- B Tamil Nadu
- C West Bengal
- D Andhra Pradesh

Answer: A

Question 35

If price of an article decreases from Rs P1 to Rs 75, quantity demanded increases from 1000 units to 1200 units. If point elasticity of demand is 3.2 find P1?

- A Rs 85
- B Rs 80
- C Rs 90
- D Rs 95

Answer: B

Question 36

Match the characteristics with their market structure:

- (a) Differentiated products, but close substitutes for consumers so their demand curves are elastic
- (b) Homogeneous product, all goods are perfect substitutes for consumers

- A (a) Monopolistic Competition, (b) Pure Competition
- B (a) Monopolistic Competition, (b) Pure Monopoly
- C (a) Pure Competition, (b) Monopolistic Competition
- D (a) Pure Monopoly, (b) Pure Competition

Answer: A

Question 37

Which of the following gases is produced due to incomplete combustion of fuel?

- A Carbon Dioxide
- B Carbon Monoxide
- C Methane
- D Ethane

Answer: B

Question 38

Organisms that generate energy using light are known as

- A Chaemolithotrophs
- B Oligotrophs
- C Bacteria
- D Photoautotrophs

Answer: D

SSC CHSL Free Videos (Youtube)

Question 39

Which is the first Hindi newspaper of India?

- A Udaan
- B Azad Vichaar
- C Udant Martand
- D Vichaar Vyakti

Answer: C

Question 40

What is the capital of Portugal?

- A Lisbon

- B Minsk
- C Vienna
- D Buenos Aires

Answer: A

Question 41

Madrid is the Capital City of

- A Philippines
- B Maldives
- C Spain
- D United Kingdom

Answer: C

Question 42

Alexander the Great was born in

- A 356 BC
- B 189 BC
- C 189 AD
- D 356 AD

Answer: A

Question 43

Akbar (1556-1605 AD) was the ruler of which dynasty?

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

Answer: C

Question 44

Who invented Rocket?

- A Rich K Goyle
- B E M Forster
- C Robert Goddard
- D James Anderson

Answer: C

Question 45

Weight of a person at a height of $2R$ from the centre of the earth, where R is the radius of the earth

- A remains same
- B becomes half
- C becomes twice
- D becomes onefourth

Answer: D

Question 46

How can we measure specific gravity of milk?

- A Using a viscometer
- B Using an odometer
- C Using a hygrometer
- D Using a hydrometer

Answer: D

Question 47

Constitution Day of India is on

- A 26th January
- B 23rd June
- C 15th August
- D 26th November

Answer: D

Question 48

Article 44 of the Indian Constitution "Uniform civil code for the citizens" deals with

- A the directive principles of state policy
- B the Union Government
- C the State Government
- D the fundamental rights of the Indian Citizen

Answer: A

Question 49

Who is the first Indian cricketer to have scored a triple hundred in test cricket?

- A Rahul Dravid
- B Sachin Tendulkar
- C VVS Laxman
- D Virender Sehwag

Answer: D

Question 50

Who wrote the book "The Arabian Nights"?

- A Stephen Hawkings
- B Vikram Seth
- C Zoya Hasan

D Richard Burton

Answer: D

English

Instructions

For the following questions answer them individually

Question 51

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.

The professorover just one point for full two hours.

A deliberated

B mentioned

C conversed

D stated

Answer: A

Question 52

Rearrange the parts of the sentence in correct order.

Statistics show

Pfigures over the last three decades

Qin several parts of India

Ra steady rise in the turnout

A RPQ

B RQP

C PQR

D QPR

Answer: A

Question 53

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'.

Priya got good grades(A)/not in Hindi essay(B)/but also in arithmetic.(C)/No error(D)

A A

B B

C C

D D

Answer: B

Question 54

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

the recently dead person in question

A oblivate

B deceased

C euthanized

D reposed

Answer: B

Question 55

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

The best of both worlds

A To live like a saint so that you are the best in the living world as well as the heavens

B To be lucky in life as well as in death

C The benefits of widely differing situations, enjoyed at the same time

D To be popular amongst both the opposing groups

Answer: C

Question 56

Select the antonym of vigour

A lethargy

B fettle

C kilter

D robust

Answer: A

Question 57

Select the synonym of: streak

A freak

B bright

C immaculate

D smear

Answer: D

Question 58

Select the antonym of: skeptic

A profaner

B heretic

C atheist

D devotee

Answer: D

Question 59

Select the word with the correct spelling.

A humanoid

- B spiling
- C amigrate
- D referrent

Answer: A

Question 60

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 told to the coach(A)/that I won't be able(B)/to come for the practice.(C)/No error(D)

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

Answer: A

Question 61

Select the synonym of sentry

- A bandit
- B competitor
- C sentinel
- D foe

Answer: C

Question 62

Improve the bracketed part of the sentence.

If a person (studied) the history of the Maratha empire, he would have wondered how a small warrior tribe could have challenged the mighty Mughals.

- A has studied
- B had studied

- C could study
- D no improvement

Answer: B

Question 63

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

To take the cake

- A To have something unexpectedly good to eat
- B To get a lovely gift
- C To grab the prize before others
- D To to be especially good; outstanding

Answer: D

Question 64

Select the word with the correct spelling.

- A revolver
- B culpable
- C vegetate
- D rhythmmic

Answer: B

Question 65

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.

Father said to Rahul, "Are you in such a hurry to cross the road?"

- A Father asked Rahul if he was in such a hurry to cross the road.
- B Father asked Rahul whether he was in a big hurry to cross the road.
- C Father asked Rahul that if he was in such a hurry to cross the road.

D Father ask Rahul whether he was in such a hurry to cross the road.

Answer: C

Question 66

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 most useful gift of my wedding was given to me by my aunt.

A My aunt gave me the most useful gift of my wedding.

B My aunt had given me the most useful gift of my wedding.

C The gift which has been most useful has been given to me by my aunt.

D My aunt has given me the most useful gift of my wedding.

Answer: A

Question 67

Rearrange the parts of the sentence in correct order.

A dissent in a court

Pthe intelligence of a future day

Qto the brooding spirit of law, to

Rof last resort is an appeal

A QRP

B RQP

C PRQ

D PQR

Answer: B

Question 68

Improve the bracketed part of the sentence.

By 2030 India (would) have become the most populous country in the world.

A will

B should

C shall

D no improvement

Answer: A

Question 69

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 won't be able to come to the party, as I have certainto meet.

A promises

B commitments

C assurances

D tasks

Answer: B

Question 70

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

To cut off a branch, limb, or twig from the main body of a tree

A dollop

B clop

C lop

D slop

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.

Restorative justice is(1).....from mediation though it involves meetings and dialogues to fix responsibility for wrongdoing and to find a solution acceptable to(2).....three parties. More importantly, it directly addresses victim needs and(3)..... emphasises the private dimensions of a public wrong. It is not a substitute(4).....the formal criminal justice system, but a good backup to reduce its workload and to increase the sense of justice in the system as a(5).....

Question 71

(1)

- A clear
- B distinct
- C recognisable
- D specific

Answer: B

Question 72

(2)

- A all
- B entire
- C full
- D complete

Answer: A

Question 73

(3)

- A so
- B therefore
- C because it
- D then it

Answer: B

Question 74

(4)

- A to
- B for
- C of

D from

Answer: A

Question 75

(5)

A total

B aggregate

C whole

D entirety

Answer: C

Mathematics

Instructions

For the following questions answer them individually

Question 76

The sum of $4x + 3y - 7z$, $x - y - z$ and $-2x - 3y + 4z$ is

A $3x - y - 4z$

B $3x - y + 4z$

C $3x + y - 4z$

D $3x + y + 4z$

Answer: A

Explanation:

Sum of : $(4x + 3y - 7z)$, $(x - y - z)$ and $(-2x - 3y + 4z)$

$$= (4x + x - 2x) + (3y - y - 3y) + (-7z - z + 4z)$$

$$= 3x - y - 4z$$

=> Ans - (A)

Question 77

What should be the average speed of the car to cover a distance of 342 km in 1.9 hours?

- A 180 m/s
- B 90 m/s
- C 50 m/s
- D 100 m/s

Answer: C

Explanation:

The car covers 342 km in 1.9 hours

$$\text{Speed of car (in km/h)} = \frac{342}{1.9} = 180 \text{ km/hr}$$

$$\Rightarrow \text{Speed of car (in m/s)} = 180 \times \frac{5}{18}$$

$$= 10 \times 5 = 50 \text{ m/s}$$

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

Question 78

Total surface area of a cube is 486 sq cm, find sum of length of all its edges?

- A 216 cms
- B 108 cms
- C 54 cms
- D 162 cms

Answer: B

Explanation:

Let the side of the cube = a cm

$$\text{Total surface area of cube} = 6a^2 = 486$$

$$\Rightarrow a^2 = \frac{486}{6} = 81$$

$$\Rightarrow a = \sqrt{81} = 9 \text{ cm}$$

Number of edges in a cube = 12

$$\therefore \text{Sum of all edges} = 12 \times 9 = 108 \text{ cm}$$

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

Question 79

Profit of Rs 104000 has to be divided among three partners Ashok, Bimla and Chirag in the ratio 6:4:3. How much does Chirag get?

- A 24000
- B 32000
- C 48000
- D 12000

Answer: A

Explanation:

Total profit to be distributed = Rs. 1,04,000

Ratio of profit divided among Ashok, Bimla and Chirag = 6:4:3

Thus, amount that Chirag will get = $\frac{3}{(6+4+3)} \times 104000$

$$= \frac{3}{13} \times 104000$$

$$= 3 \times 8000 = \text{Rs } 24,000$$

=> Ans - (A)

Question 80

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

- A $2\operatorname{cosec}A$
- B $2\operatorname{cosec}^2A$
- C $2\sec^2A$
- D $2\sec A$

Answer: D

Explanation:

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

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

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

$$= \frac{1+2\sin A + 1}{\cos A(1+\sin A)} \quad [\because \sin^2 A + \cos^2 A = 1]$$

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

$$= \frac{2}{\cos A} = 2\sec A$$

=> Ans - (D)

Question 81

The diagonals are not perpendicular in a

A Parallelogram

B Kite

C Rhombus

D Square

Answer: A

Explanation:

In a square and a rhombus diagonals are perpendicular bisectors of each other. In a kite diagonals intersect at 90° and in a parallelogram diagonals are not perpendicular to each other.

=> Ans - (A)

Question 82

An angle is $(\frac{2}{3})$ rd of its supplementary angle. What is the measure of the angle?

A 108°

B 72°

C 54°

D 36°

Answer: B

Explanation:

Let the supplementary angle = θ

Required angle = $(\frac{2}{3}\theta)$

Sum of an angle and its supplementary angle = 180°

$$\Rightarrow \theta + (\frac{2}{3}\theta) = 180^\circ$$

$$\Rightarrow \frac{5}{3}\theta = 180^\circ$$

$$\Rightarrow \theta = \frac{180 \times 3}{5} = 108^\circ$$

$$\therefore \text{Measure of the angle} = \frac{2}{3} \times 108 = 72^\circ$$

=> Ans - (B)

Question 83

If the selling price is Rs 855 after getting a discount of 5%, what was the marked price?

- A Rs 897.75
- B Rs 812.25
- C Rs 814
- D Rs 900

Answer: D

Explanation:

Let Marked Price = Rs. x

Selling price = Rs. 855

$$\text{Discount \%} = \frac{(x-855)}{x} \times 100 = 5$$

$$\Rightarrow \frac{x-855}{x} = \frac{5}{100} = \frac{1}{20}$$

$$\Rightarrow 20x - 17100 = x$$

$$\Rightarrow 20x - x = 19x = 17100$$

$$\Rightarrow x = \frac{17100}{19} = \text{Rs } 900$$

\Rightarrow Ans - (D)

Question 84

Dev lent Rs. 8000 to Jairam for 17 years and Rs. 4700 to Karnik for 16 years on simple interest at the same rate of interest and received Rs. 21120 in all from both of them as interest. The rate of interest per annum is:

- A 10.5 percent
- B 10 percent
- C 11 percent
- D 11.5 percent

Answer: B

Explanation:

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

Sum lent to Jairam = Rs. 8000 for 17 years and Rs. 4700 to Karnik for 16 years

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

$$\Rightarrow \text{Total interest} = \left(\frac{8000 \times r \times 17}{100} \right) + \left(\frac{4700 \times r \times 16}{100} \right) = 21120$$

$$\Rightarrow 1360r + 752r = 21120$$

$$\Rightarrow 2112r = 21120$$

$$\Rightarrow r = \frac{21120}{2112} = 10\%$$

\Rightarrow Ans - (B)

Question 85

If $\cos 2\pi/3 = x$, then the value of x is

A $-1/2$

B $1/2$

C $-\sqrt{3}/2$

D $\sqrt{3}/2$

Answer: A

Explanation:

Expression : $\cos 2\pi/3 = x$

$$= \cos\left(\pi - \frac{\pi}{3}\right)$$

$$= -\cos\left(\frac{\pi}{3}\right)$$

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

\Rightarrow Ans - (A)

Question 86

The area of a trapezium is 21 sq cm, the distance between the parallel sides is 3 cm and one of the parallel sides is 8.3 cm. What is the length of the other parallel side?

A 12.7 cm

B 7.7 cm

C 10.7 cm

D 5.7 cm

Answer: D

Explanation:

Let the length of other parallel side = x cm

Height of the trapezium, $h = 3$ cm

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

$$\Rightarrow \frac{1}{2} \times (8.3 + x) \times 3 = 21$$

$$\Rightarrow 8.3 + x = \frac{21 \times 2}{3}$$

$$\Rightarrow 8.3 + x = 14$$

$$\Rightarrow x = 14 - 8.3 = 5.7 \text{ cm}$$

\Rightarrow Ans - (D)

Question 87

If $\cot(A/2) = x$, then the value of x is

A cosecA - cotA

B cosecA + cotA

C secA + cotA

D secA - cotA

Answer: B

Explanation:

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

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

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

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

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

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

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

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

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

Now, to find : $\cot\left(\frac{A}{2}\right)$

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

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

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

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

Multiplying both numerator and denominator by $(\sqrt{1+\cos A})$

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

=> Ans - (B)

Question 88

The points A(x,2), B(2,1) and C(6,3) are collinear. Find x?

A 4

B 2

C 4

D 2

Answer: C

Explanation:

Coordinates of points A(x,2), B(2,1) and C(6,3)

Since the points are collinear, thus the area of triangle formed by these points = 0

Area of triangle formed by points (x_1, y_1) , (x_2, y_2) and (x_3, y_3) is $= \frac{1}{2}[x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)]$

=> Area of $\triangle ABC = 0$

$$\Rightarrow \frac{1}{2}[x(1 - 3) + 2(3 - 2) + 6(2 - 1)] = 0$$

$$\Rightarrow -2x + 2 + 6 = 0$$

$$\Rightarrow -2x = -8$$

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

=> Ans - (C)

Question 89

A vendor buys some bananas at the rate of 2 for Re 1 and sells at the rate of 10 for Rs 7. What will be the result?

- A 40 percent loss
- B 28.57 percent gain
- C 40 percent gain
- D 28.5 percent loss

Answer: C

Explanation:

The vendor buys 2 bananas for Re 1

$$\Rightarrow \text{Cost price of 1 banana} = \frac{1}{2} = \text{Rs } 0.5$$

He sells 10 bananas for Rs. 7

$$\Rightarrow \text{Selling price of 1 banana} = \frac{7}{10} = \text{Rs } 0.7$$

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

$$\Rightarrow \text{Profit \%} = \frac{(0.7-0.5)}{0.5} \times 100$$

$$= \frac{2}{5} \times 100 = 40\%$$

\Rightarrow Ans - (C)

Question 90

Given: $x - 5 \leq 2x - 3$ and $2x - 1/2 \geq 5x + 2$; then x can take which of the following values?

- A -1
- B 1
- C -3
- D 3

Answer: A

Explanation:

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

$$\Rightarrow 2x + x \geq 3 - 5$$

$$\Rightarrow 3x \geq -2$$

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

Expression 2 : $2x - 1/2 \geq 5x + 2$

$$\Rightarrow 5x - 2x \leq -2 - \frac{1}{2}$$

$$\Rightarrow 3x \leq \frac{-5}{2}$$

$$\Rightarrow x \leq \frac{-5}{6} \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $\frac{-2}{3} \leq x \leq \frac{-5}{6}$

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

\Rightarrow Ans - (A)

Question 91

The mean of marks secured by 45 students in division A of class X is 56, 40 students of division B is 52 and that of 40 students of division C is 50. Find the mean of marks of the students of three divisions of Class X.

A 52.1

B 51.4

C 52.8

D 54.2

Answer: C

Explanation:

Total marks secured by 45 students in division A = $45 \times 56 = 2520$

Total marks secured by 40 students in division B = $40 \times 52 = 2080$

Total marks secured by 40 students in division C = $40 \times 50 = 2000$

\Rightarrow Mean of marks of the students of three divisions of Class X = $\frac{(2520+2080+2000)}{(45+40+40)}$

$$= \frac{6600}{125} = 52.8$$

\Rightarrow Ans - (C)

Question 92

Find the value of
 $199992 \times 200008 = ?$

A 39999799936

B 39999999836

C 39999999936

D 39999999926

Answer: C

Explanation:

Expression : 199992×200008

$$= (200000 - 8) \times (200000 + 8)$$

$$= (200000)^2 - (8)^2$$

$$= 40000000000 - 64 = 39999999936$$

=> Ans - (C)

Question 93

Which of the following quadratic equations has real roots?

A $4x^2 - 9x + 6 = 0$

B $3x^2 - 2x + 6 = 0$

C $2x^2 - 7x + 6 = 0$

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

Answer: C

Explanation:

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

(A) : $4x^2 - 9x + 6 = 0$

$$\Rightarrow D = (-9)^2 - 4(4)(6) = 81 - 96 = -15$$

(B) : $3x^2 - 2x + 6 = 0$

$$\Rightarrow D = (-2)^2 - 4(3)(6) = 4 - 72 = -68$$

(C) : $2x^2 - 7x + 6 = 0$

$$\Rightarrow D = (-7)^2 - 4(2)(6) = 49 - 48 = 1$$

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

$$\Rightarrow D = (-2)^2 - 4(1)(2) = 4 - 8 = -4$$

Thus, the equation : $2x^2 - 7x + 6 = 0$ has real roots.

Question 94

The solution set of $4x - 3y = 10$ and $3x + y = 14$ is

A $\{(5, 3)\}$

B $\{(4, 2)\}$

C $\{(11, 1)\}$

D $\{(2, 3)\}$

Answer: B

Explanation:

Equation 1 : $4x - 3y = 10$

Equation 2 : $3x + y = 14$

Multiplying equation (ii) by 3 and adding it to equation (i)

$$\Rightarrow (4x + 9x) + (-3y + 3y) = (10 + 42)$$

$$\Rightarrow 13x = 52$$

$$\Rightarrow x = \frac{52}{13} = 4$$

Substituting it in equation (ii), $\Rightarrow y = 14 - 3(4) = 14 - 12 = 2$

$$\therefore (x, y) = (4, 2)$$

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

Question 95

If 16% of an electricity bill is deducted, Rs 1806 is still to be paid. How much was the bill?

A Rs 1557

B Rs 2186

C Rs 1593

D Rs 2150

Answer: D**Explanation:**Let the original bill amount = $Rs.100x$

If 16% of an electricity bill is deducted, bill left = $\frac{100-16}{100} \times 100x = 84x$

According to ques, $\Rightarrow 84x = 1806$

$$\Rightarrow x = \frac{1806}{84} = 21.5$$

$$\therefore \text{Original bill amount} = 100 \times 21.5 = Rs.2150$$

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

Question 96

P and Q can do a project in 20 and 12 days respectively. In how many days can they complete 40% of the project if they work together?

A 1.5 days

B 3 days

C 6 days

D 9 days

Answer: B

Explanation:

Let total work to be done = 60 units

P can complete the work alone in 20 days

$$\Rightarrow \text{P's efficiency} = \frac{60}{20} = 3 \text{ units/day}$$

Q can complete the work alone in 12 days

$$\Rightarrow \text{Q's efficiency} = \frac{60}{12} = 5 \text{ units/day}$$

(P + Q)'s 1 day's work = 3 + 5 = 8 units/day

$$\Rightarrow 40\% \text{ of the work} = \frac{40}{100} \times 60 = 24 \text{ units}$$

\therefore Time taken by them together to complete 40% of the work = $\frac{24}{8} = 3$ days

\Rightarrow Ans - (B)

Question 97

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	60	30%
Executive	8	12	30%
Trainee	5	12	10%

What is the average bonus in rupees

A 478000

B 246667

C 377142

D 218000

Answer: C

Explanation:

$$\text{Total bonus of managers (in lakh)} = 1 \times 60 \times \frac{30}{100} = 18 \text{ lakhs}$$

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

Total bonus of trainee (in lakh) = $5 \times 12 \times \frac{10}{100} = 6$ lakhs

=> Average bonus in rupees = $\frac{(18+28.8+6)}{(1+8+5)}$

= $\frac{52.8}{14} = 3.77142$ lakhs = 3,77,142

=> Ans - (C)

Question 98

Refer the below data table and answer the following question.

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

Answer: B

Explanation:

Total exports from the three companies together in :

2011 = 2000 + 5000 + 2000 = 9000

2012 = 2000 + 3000 + 1000 = 6000

2013 = 2000 + 2000 + 1000 = 5000

2014 = 3000 + 3000 + 3000 = 9000

2015 = 4000 + 4000 + 2000 = 10000

Clearly, total exports in 2011 and 2014 are equal to 9000

=> Ans - (B)

Question 99

Refer the below data table and answer the following question

Year	Profit or (-Loss) in Rs crore
2011	10
2012	-20
2013	-15
2014	10
2015	-25

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

- A Loss of Rs 50 crores
- B Profit of Rs 40 crores
- C Profit of Rs 50 crores
- D Loss of Rs 40 crores

Answer: D

Explanation:

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

$$= 10 - 20 - 15 + 10 - 25$$

$$= -40$$

Since, it is negative, thus loss of Rs. 40 crore

=> Ans - (D)

Question 100

Refer the below data table and answer the following question.

India's Exports in	Value in Million US\$
Jewellery	625
Software	725
Cotton	825
Steel	750
Electronics	625

Software was what percent of total exports ?

- A 25.42 percent
- B 22.92 percent

C 20.42 percent

D 17.92 percent

Answer: C

Explanation:

Value in millions of Software = 725

Total exports = 625 + 725 + 825 + 750 + 625 = 3550

=> % of Jewelry in total exports = $\frac{725}{3550} \times 100$

= $\frac{2900}{142} \approx 20.42\%$

=> Ans - (C)

SSC CHSL 18 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.

RESISTANCE : OHM :: CURRENT : ?

- A Faraday
- B Radian
- C Ampere
- D Volt

Answer: C

Explanation:

Ohm is the S.I. unit of resistance, similarly *ampere* is the unit of measuring current.

=> Ans - (C)

Question 2

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

UHCDN : VIDEO :: OKZXDQ : ?

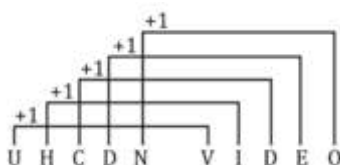
- A REPLAY
- B REPOSE
- C PLAYER
- D OPPOSE

Answer: C

Explanation:

Expression = UHCDN : VIDEO :: OKZXDQ : ?

The pattern followed is :



Thus, OKZXDQ : **PLAYER**

=> Ans - (C)

Question 3

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

64: 8 :: 289: ?

A 17

B 27

C 26

D 19

Answer: A

Explanation:

Expression = 64: 8 :: 289: ?

The pattern followed is = $x : \sqrt{x}$

Eg :- $64 : \sqrt{64} = 64 : 8$

Similarly, $\sqrt{289} = 17$

=> Ans - (A)

Question 4

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

13 : 156 :: 17 : ?

A 135

B 270

C 272

D 130

Answer: C

Explanation:

Expression = 13 : 156 :: 17 : ?

The pattern followed is = $x : x(x - 1)$

Eg :- $13 : 13(13 - 1) = 13 : 156$

Similarly, $17 \times (17 - 1) = 17 \times 16 = 272$

=> Ans - (C)

Question 5

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

- A Islamabad
- B Kabul
- C Canberra
- D Sydney

Answer: D

Explanation:

Islamabad is the capital of Pakistan, Kabul of Afghanistan and Canberra is capital of Australia, hence Sydney is the odd one out.

=> Ans - (D)

Question 6

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

- A EG
- B EB
- C BY
- D GD

Answer: A

Explanation:

(A) : E (+2 letters) = G

(B) : E (-3 letters) = B

(C) : B (-3 letters) = Y

(D) : G (-3 letters) = D

=> Ans - (A)

Question 7

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

- A 2378

B 7562

C 6662

D 1155

Answer: D

Explanation:

The sum of digits of first three numbers is 20, but $1 + 1 + 5 + 5 = 12$, hence 1155 is the odd one out.

=> Ans - (D)

Question 8

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

A 149

B 157

C 199

D 121

Answer: D

Explanation:

Among the given numbers, only $121 = (11)^2$ is a perfect square, hence it is the odd one out.

=> Ans - (D)

Question 9

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

Lieutenant, Captain, ? , Lieutenant colonel

A Brigadier

B Major

C Sub lieutenant

D Major general

Answer: B

Explanation:

Sequence of armed force ranking/designations.

= Lieutenant -> Captain -> Major -> Lieutenant colonel

=> Ans - (B)

Question 10

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

?, LMN, RST, WXY

A EGF

B DFE

C DEF

D EFG

Answer: D

Explanation:

Expression : ?, LMN, RST, WXY

The pattern followed is :

E F G L M N R S T W X Y
 └──┬──┘ └──┬──┘ └──┬──┘
 +5 +4 +3

Thus, missing term = EFG

=> Ans - (D)

Question 11

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

TU, ?, NO, XY

A IJ

B FG

C DF

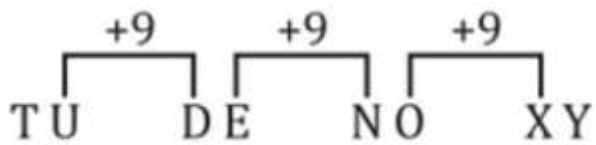
D DE

Answer: D

Explanation:

Expression : TU, ?, NO, XY

The pattern followed is :



Thus, missing term = DE

=> Ans - (D)

Question 12

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

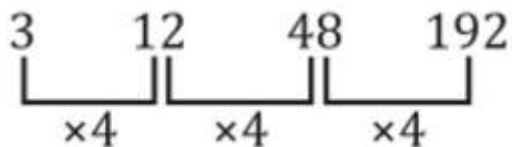
3, 12, 48, ?

- A 96
- B 184
- C 192
- D 384

Answer: C

Explanation:

All the numbers are multiplied by 4.



Thus, missing number = 192

=> Ans - (C)

Question 13

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

Statements :

- (I) Some camels are ships.
- (II) No ship is a boat.

Conclusion :

- (I) Some ships are camels.
- (II) Some camels are not boats.

- A Conclusion I follows
- B Conclusion II follows

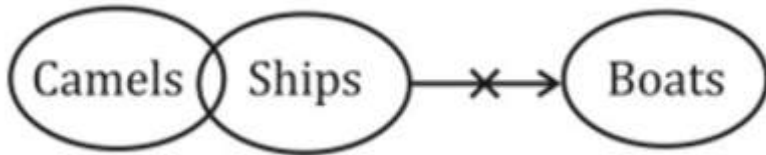
C Neither I nor II follows

D Both I and II follows

Answer: D

Explanation:

The venn diagram for above statements is :



Conclusion :

(I) Some ships are camels = true

(II) Some camels are not boats = true

Thus, both I and II follows

=> Ans - (D)

Question 14

P, Q, R, S and T are sitting together. T is at one extreme end. P is the neighbour of T and is third to the left of Q. Who is fourth to the right of T?

A P

B T

C Q

D S

Answer: C

Explanation:

T is at one extreme end. P is the neighbour of T and is third to the left of Q.

=> T sits at extreme left end, and P sits to the immediate right of T. Also, Q sits at extreme right end.

Thus, arrangement :

T	P	R/S	S/R	Q
---	---	-----	-----	---

∴ Q is fourth to the right of T.

=> Ans - (C)

Question 15

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

- i. Joke
- ii. Jockey
- iii. Jocular
- iv. Jocund

A iv, ii, i, iii

B ii, iii, iv, i

C ii, iii, i, iv

D iv, ii, iii, i

Answer: B

Explanation:

As per the order of dictionary :

= Jockey -> Jocular -> Jocund -> Joke

≡ ii, iii, iv, i

=> Ans - (B)

Question 16

In a certain code language, "DANGER" is written as "145237" and "RANCOR" is written as "745967". How is "RAGE" written in that code language?

A 7231

B 7234

C 7423

D 7441

Answer: C

Explanation:

The codes for each letter is given :

R -> 7

A -> 4

G -> 2

E -> 3

Thus, RAGE : **7423**

=> Ans - (C)

Question 17

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

5	6	7
4	5	6
9	11	?

A 19

B 1

C 21

D 13

Answer: D

Explanation:

The pattern followed is that in each column, the number at the end is obtained by adding the other two.

Eg :- $5 + 4 = 9$ and $6 + 5 = 11$

Similarly, $7 + 6 = 13$

=> Ans - (D)

Question 18

If "K" means "minus", "L" means "divided by", "M" means "plus" and "D" means "multiplied by", then $117 \text{ L } 3 \text{ K } 5 \text{ M } 12 \text{ D } 8 = ?$

A 150

B 125

C 130

D 145

Answer: C

Explanation:

Expression : $117 \text{ L } 3 \text{ K } 5 \text{ M } 12 \text{ D } 8 = ?$

$\equiv 117 \div 3 - 5 + 12 \times 8$

$= \left(\frac{117}{3}\right) + (-5) + (12 \times 8)$

$= 39 - 5 + 96 = 130$

=> 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?

P_R_S_QRR_

A QPRS

B QRPS

C QRPP

D QPSR

Answer: B

Explanation:

The pattern followed is that in groups of 5, the term 'PQRRS' is repeated.

= PQRRS PQRRS

=> Ans - (B)

Question 20

Kajal left home for a hospital. She travelled 5 km towards east, then turned towards south-east to travel another 10 km, then again she turned towards north-east to travel 10 km and finally, she reached the hospital. In which direction is hospital with respect to her house?

A South

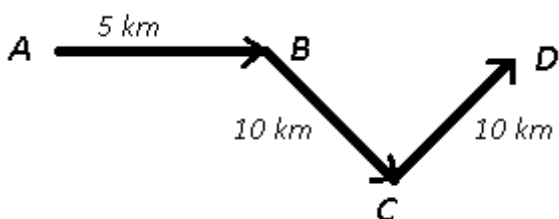
B North

C West

D East

Answer: D

Explanation:



Kajal started from point A and travelled 5 km east to reach B, then turned south-east and travelled for 10 km, from point C, again travelled 10 km towards north-east direction and reached the hospital at point D.

Thus, the hospital is east of her house.

=> Ans - (D)

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, 'D' can be represented by 68, 10, etc., and 'R' can be represented by 34, 22, etc. Similarly, you have to identify the set for the word 'PIZZA'.

Matrix - I

	0	1	2	3	4
0	I	P	I	M	R
1	D	I	W	R	W
2	S	H	R	B	E
3	F	R	E	P	R
4	R	E	P	C	F

Matrix - II

	5	6	7	8	9
5	A	E	Z	A	Z
6	E	G	A	D	Y
7	K	A	X	G	M
8	A	B	C	A	W
9	Z	V	M	H	N

A 33, 40, 85, 14, 20

B 01, 02, 95, 66, 85

C 42, 02, 57, 57, 10

D 33, 11, 57, 95, 58

Answer: D

Explanation:

(A) : 33, 40, 85, 14, 20 = PRAWS

(B) : 01, 02, 95, 66, 85 = PIZGA

(C) : 42, 02, 57, 57, 10 = PIZZD

(D) : 33, 11, 57, 95, 58 = **PIZZA**

=> Ans - (D)

Question 22

Deepak has a brother named Aditya. Deepak is the son of Kuldeep. Bunty is Kuldeep's father. How is Aditya related to Bunty?

A Uncle

B Brother

C Grandson

D Grandfather

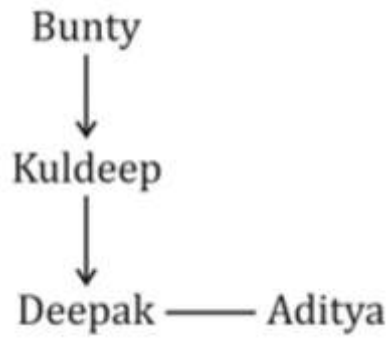
Answer: C

Explanation:

Deepak has a brother named Aditya. Deepak is the son of Kuldeep.

=> Kuldeep is the father of Deepak and Aditya.

Bunty is Kuldeep's father.

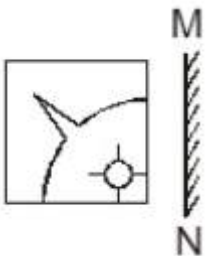


Thus, Aditya is Bunty's grandson.

=> 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?

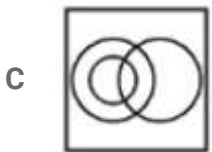
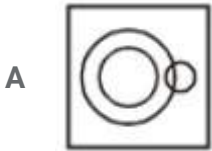




Answer: C

Question 24

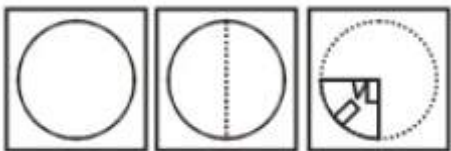
Identify the diagram that best represents the relationship among the given classes.
Males, Doctors, Brothers



Answer: C

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: D

General Awareness

Instructions

For the following questions answer them individually

Question 26

The Indian Parliament House was designed by _____.

- A Alvar Aalto
- B Michael Graves
- C Edwin Lutyens
- D Renzo Piano

Answer: C

Question 27

Raghuveer Chaudhari won Jnanpith Award for work in which language?

- A Gujarati
- B Marathi
- C Hindi

D Telugu

Answer: A

Question 28

Which drug is used as an Antidepressant?

A Oxybutynin

B Tramadol

C Sumatriptan

D Bupropion

Answer: D

Question 29

The orange colour of carrot is because of

A it grows in the soil.

B Carotene

C it is not exposed to sunlight.

D the entire plant is orange in colour.

Answer: B

Question 30

Snake venom is highly modified saliva containing _____.

A prototoxins

B neutrotoxins

C zootoxins

D electrotoxins

Answer: C

Question 31

Heavy water is _____.

- A Monoterium oxide
- B Polyterium oxide
- C Deuterium oxide
- D Trisium oxide

Answer: C

Question 32

Which among the following elements has highest electronegativity?

- A Gallium
- B Sodium
- C Arsenic
- D Caesium

Answer: C

Question 33

How many GB is equal to 1 TB?

- A 128
- B 256
- C 512
- D 1024

Answer: D

Question 34

Most airports in India are named after_____

- A Places

- B Festivals
- C Politicians
- D Animals

Answer: C

Question 35

Find arc elasticity of demand, if quantity demanded falls from 1050 to 950 when price of the item is increased from Rs 250 to Rs 290?

- A -0.68
- B -0.6
- C 0.68
- D 0.6

Answer: A

Question 36

Suppose the equilibrium price for sugar is Rs 50/kg. If the government sets a price floor of Rs 70/kg then _____.

- A quantity of sugar demanded will be greater than the quantity demanded at equilibrium price
- B there will be a shortage of sugar in the market
- C there will be a surplus of sugar in the market.
- D quantity of sugar supplied will be less than what was supplied at the equilibrium price

Answer: C

Question 37

Madhya Pradesh has the highest number of reserves of which of the following animals?

- A Tiger
- B Lion
- C Peacock

D Langur

Answer: A

Question 38

Which type of pathogen causes the water-borne disease Schistosomiasis ?

A Parasitic

B Protozoan

C Bacterial

D Viral

Answer: A

Question 39

The highest airport in India is

A Dharamshala airport

B Pithoragarh airport

C Leh airport

D Dehradun airport

Answer: C

Question 40

World's longest land border is between which two countries?

A Australia and New Zealand

B India and China

C Switzerland and Italy

D Canada and USA

Answer: D

Question 41

Baghdad is the Capital City of _____.

- A** Iraq
- B** Thailand
- C** China
- D** Russia

Answer: A

Question 42

The Bibi Ka Maqbara is a tomb located in _____. It was built by Azam Shah, son of Aurangzeb, in 1678.

- A** Hyderabad
- B** Aurangabad
- C** Lucknow
- D** Allahabad

Answer: B

Question 43

Battle of Kanauj was fought in the year _____?

- A** 1764
- B** 1526
- C** 1540
- D** 1857

Answer: C

Question 44

Which company developed Java?

- A Microsoft
- B Sun
- C Novell
- D Oracle

Answer: B

Question 45

Who established the foundations of the Quantum theory?

- A Max Planck
- B Mark Nicholas
- C Albert Einstein
- D Alfred Hitchcock

Answer: A

Question 46

If in a motion, the axis of the rotation passes through an object, then the motion is called _____.

- A Orbital motion
- B Circulatory motion
- C Spin motion
- D Oscillatory motion

Answer: C

Question 47

Call sign of any aircraft carrying the Indian President is

- A Air India One
- B Airforce One
- C Code Eagle

D Flight 101

Answer: A

Question 48

Article 32 of the Indian Constitution "Remedies for enforcement of rights conferred by this Part" deals with?

A the Union Government

B the State Government

C the fundamental rights of the Indian Citizen

D the directive principles of state policy

Answer: C

Question 49

First indian sportsperson to win an individual Olympics silver for India is

A Sushil Kumar

B Rajyavardhan Singh

C Abhinav Bindra

D Dhyanchand

Answer: B

Question 50

Who wrote the Harry Potter series?

A J.R.R.Tolkins

B George R.R. Martin

C J.K.Rowling

D Stephen King

Answer: C

English

Instructions

For the following questions answer them individually

Question 51

Select the antonym of to entrust

- A to confer
- B to allot
- C to rely
- D to deny

Answer: D

Question 52

Select the word with the correct spelling.

- A chaastity
- B collapse
- C radialy
- D scansione

Answer: B

Question 53

Select the synonym of subsidy

- A endowment
- B forfeit
- C mulct
- D reward

Answer: A

Question 54

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

liquids forming a homogeneous mixture when added together

A irascible

B crucible

C miscible

D risible

Answer: C

Question 55

Improve the bracketed part of the sentence.

It is wishful thinking that you can improve the situation by doing (with) such people.

A away of

B away with

C from

D no improvement

Answer: B

Question 56

Rearrange the parts of the sentence in correct order.

It is not uncommon

P-to push for public expenditure

Q-at a time

R-when private investment sentiment is weak

A QRP

B PQR

C RPQ

D QPR

Answer: B

Question 57

Select the synonym of digress

A sojourn

B meander

C tarriance

D regress

Answer: B

Question 58

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.

Can we send this container by ship?

A Can this container be sent by ship?

B Could this container be sent by ship by us?

C Could have we sent this container by ship?

D This container can be sent by ship. Can we?

Answer: A

Question 59

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

Shooting fish in a barrel

A To do random acts of stupidity

B To behave in a cruel manner

C Ridiculously easy

D To escape through a narrow opening

Answer: C

Question 60

Select the word with the correct spelling.

- A brunete
- B nemonic
- C abhorred
- D carammels

Answer: C

Question 61

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.

"How often do you go to the gym?" said Deepak to Juned.

- A Deepak asked Juned that how often he goes to the gym.
- B Deepak asked Juned that how often he has been going to the gym.
- C Deepak asked Juned how often he went to the gym.
- D Deepak asked Juned that how often he went to the gym.

Answer: C

Question 62

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'.

Although of good(A)/rains the production(B)/of food grains fell.(C)/No error(D)

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

Answer: A

Question 63

Rearrange the parts of the sentence in correct order.

District judges

P-in far-flung districts

Q-and gag orders

R-have been authorising mass blocking of online content

A PRQ

B PQR

C QPR

D RPQ

Answer: A

Question 64

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

State laws _____ the sale of alcoholic beverages inside the stadium.

A freeze

B inhibit

C prohibit

D impede

Answer: C

Question 65

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

to free someone or something from a constraint or difficulty

A to exterminate

B to expurgate

C to intricate

D to extricate

Answer: D

Question 66

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

The security for the Prime Minister has been _____up following the shoot out.

- A secured
- B fortified
- C strengthened
- D beefed

Answer: D

Question 67

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'.

In summer, the ponds(A)/just dry down(B)/in the scorching heat(C)/No error(D)

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

Answer: B

Question 68

Select the antonym of prestige

- A eminence
- B cachet
- C insignificance
- D kudos

Answer: C

Question 69

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

To sleep with the fishes

- A Always be in a dream world
- B To make absurd excuses
- C To sleep peacefully
- D To be dead

Answer: D

Question 70

Improve the bracketed part of the sentence.

Don't step near the cliff's edge, else your life (might be thrown into) great peril.

- A will be in
- B will face
- C would be placed in
- D no improvement

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.

This is a question that _____(1)_____ beyond rights and democracy. It plunges _____(2)_____ into the basics of what constitutes that which is social. Is not the primordialism and the _____(3)_____ of violence being used to construct a new kind of social? Are the current strategies of law enough to ponder _____(4)_____ and _____(5)_____ about such events?

Question 71

(1)

- A goes
- B went

C has gone

D is going

Answer: A

Question 72

(2)

A far

B deep

C wide

D low

Answer: B

Question 73

(3)

A tact

B finesse

C elegance

D banality

Answer: D

Question 74

(4)

A over

B on

C upon

D about

Answer: A

Question 75

(5)

- A strategise
- B plan
- C philosophise
- D brood

Answer: C

Mathematics

Instructions

For the following questions answer them individually

Question 76

If $3x + 5(4 - 3x) > 2 - 4x < 3x - \frac{x}{3}$; then the value of x is

- A 3
- B 0
- C 2
- D -1

Answer: C

Explanation:

Expression 1 : $3x + 5(4 - 3x) > 2 - 4x$

$$\Rightarrow 3x + 20 - 15x > 2 - 4x$$

$$\Rightarrow 12x - 4x < 20 - 2$$

$$\Rightarrow 8x < 18$$

$$\Rightarrow x < \frac{9}{4} \text{ -----(i)}$$

Expression 2 : $2 - 4x < 3x - \frac{x}{3}$

$$\Rightarrow 4x + 3x - \frac{x}{3} > 2$$

$$\Rightarrow \frac{20x}{3} > 2$$

$$\Rightarrow x > \frac{3}{10} \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $\frac{3}{10} < x < \frac{9}{4}$

The only value that x can take among the options = 2

=> Ans - (C)

Question 77

At 9% discount the selling price of a washing machine is Rs 14000, what is the selling price if the discount is 22%?

A Rs 12000

B Rs 9360

C Rs 10202.4

D Rs 13322.4

Answer: A

Explanation:

Let Marked Price of the machine = $Rs.100x$

If discount is 9%, Selling price = $\frac{100-9}{100} \times 100x = 91x$

According to ques, => $91x = 14000$

=> $x = \frac{14000}{91} = \frac{2000}{13}$

If discount is 22%, selling price = $\frac{100-22}{100} \times 100x = 78x$

= $78 \times \frac{2000}{13} = Rs.12,000$

=> Ans - (A)

Question 78

A rice trader buys 22 quintals of rice for Rs 3,344. 24% rice is lost in transportation. At what rate should he sell to earn 30% profit?

A Rs 88.86 per quintal

B Rs 197.6 per quintal

C Rs 269.2 per quintal

D Rs 260 per quintal

Answer: D

Explanation:

Cost price = Rs. 3344 for 22 quintals

$$\begin{aligned} \text{Quantity of rice left with the trader after transportation lost} &= \frac{100-24}{100} \times 22 \\ &= \frac{19}{25} \times 22 = 16.72 \text{ quintals} \end{aligned}$$

$$\begin{aligned} \text{To have 30\% profit, total selling price of the trader should be} &= \frac{130}{100} \times 3344 \\ &= \text{Rs. } 4347.2 \end{aligned}$$

$$\therefore \text{Selling price per quintal} = \frac{4347.2}{16.72} = \text{Rs. } 260$$

=> Ans - (D)

Question 79

Which of the following is correct?

A $(4x - 3y)^2 = 16x^2 - 12xy + 9y^2$

B $(4x - 3y)^2 = 16x^2 + 24xy - 9y^2$

C $(4x - 3y)^2 = 16x^2 + 12xy - 9y^2$

D $(4x - 3y)^2 = 16x^2 - 24xy + 9y^2$

Answer: D

Explanation:

Expression : $(4x - 3y)^2$

$$= (4x)^2 + (-3y)^2 + 2(4x)(-3y)$$

$$= 16x^2 + 9y^2 - 24xy$$

=> Ans - (D)

Question 80

The point P(a,b) is first reflected in origin to P1, and P1 is reflected in y-axis to (5,-4). The co-ordinates of point P are

A (-5,-4)

B (-5,4)

C (5,4)

D (5,-4)

Answer: C

Explanation:

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

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

According to ques,

$$\Rightarrow (a, -b) = (5, -4)$$

$$\Rightarrow a = 5 \text{ and } -b = -4$$

\therefore Coordinates of Point P = $(5,4)$

\Rightarrow Ans - (C)

Question 81

A missile travels at 1350 km/h. How many metres does it travel in one second?

A 369 metres

B 375 metres

C 356 metres

D 337 metres

Answer: B

Explanation:

Speed of missile = 1350 km/hr

$$\Rightarrow \text{Speed in m/s} = 1350 \times \frac{5}{18}$$

$$= 5 \times 75 = 375 \text{ m/s}$$

\therefore In 1 second, it travels 375 metres

\Rightarrow Ans - (B)

Question 82

If $\tan 330^\circ = x$, then the value of x is

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

B $-\sqrt{3}$

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

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

Answer: A

Explanation:

Expression : $\tan 330^\circ = x$

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

$$= -\tan(30)$$

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

=> Ans - (A)

Question 83

What is the value of $\frac{3}{4} + \frac{8}{9}$?

A $\frac{57}{27}$

B $\frac{11}{13}$

C $\frac{59}{36}$

D $\frac{11}{9}$

Answer: C

Explanation:

Expression : $\frac{3}{4} + \frac{8}{9}$

$$= \frac{3(9)+8(4)}{36}$$

$$= \frac{27+32}{36} = \frac{59}{36}$$

=> Ans - (C)

Question 84

If $\frac{\sin A}{\sqrt{(1-\sin^2 A)}} = x$, then the value of x is

A $\tan A$

B $\cot A$

C $\operatorname{cosec} A$

D $\cos A$

Answer: A

Explanation:

Expression : $\frac{\sin A}{\sqrt{(1-\sin^2 A)}} = x$

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

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

$$= \tan A$$

=> Ans - (A)

Question 85

What is the value of $\sqrt{\left[\frac{(1-\cos A)}{(1+\cos A)}\right]}$?

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

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

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

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

Answer: B

Explanation:

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

Multiplying both numerator and denominator by $(\sqrt{1 + \cos A})$

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

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

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

=> Ans - (B)

Question 86

The slopes of two lines are 1 and $\frac{1}{\sqrt{3}}$. What is the angle between these two lines?

A 15°

B 30°

C 45°

D 60°

Answer: A

Explanation:

Slope of the two lines, $m_1 = 1$ and $m_2 = \frac{1}{\sqrt{3}}$

Let angle between them = θ

$$\text{Then, } \tan(\theta) = \left| \frac{m_1 - m_2}{1 + m_1 m_2} \right|$$

$$\Rightarrow \tan(\theta) = \frac{1 - \frac{1}{\sqrt{3}}}{1 + \frac{1}{\sqrt{3}}}$$

$$\Rightarrow \tan(\theta) = \frac{\tan(45) - \tan(30)}{1 + \tan(45)\tan(30)}$$

$$\Rightarrow \tan(\theta) = \tan(45 - 30) \quad \because [\tan(A - B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}]$$

$$\Rightarrow \theta = 15^\circ$$

\Rightarrow Ans - (A)

Question 87

What are the roots of the quadratic equation $21x^2 - 37x - 28 = 0$?

A $\frac{-7}{3}, \frac{4}{7}$

B $\frac{3}{7}, \frac{-7}{4}$

C $\frac{7}{3}, \frac{-4}{7}$

D $\frac{-3}{7}, \frac{7}{4}$

Answer: C

Explanation:

$$\text{Equation : } 21x^2 - 37x - 28 = 0$$

$$\Rightarrow 21x^2 - 49x + 12x - 28 = 0$$

$$\Rightarrow 7x(3x - 7) + 4(3x - 7) = 0$$

$$\Rightarrow (7x + 4)(3x - 7) = 0$$

$$\Rightarrow x = \frac{-4}{7}, \frac{7}{3}$$

\Rightarrow Ans - (C)

Question 88

A rectangular swimming pool of length 25 m and breadth 12 m has a uniformly sloping floor. It is 2 m in depth on one end of its length and 3 m at the other. How much water is needed to completely fill this pool?

A 1500 cubic mts

B 2250 cubic mts

C 3000 cubic mts

D 750 cubic mts

Answer: D

Explanation:

The pool is 2 m in depth on one end of its length and 3 m at the other, thus the pool is in the shape of a trapezium whose volume will be equal to the product of area of trapezium and the width.

Length = 25 m and breadth = 12 m

$$\Rightarrow \text{Volume} = \left(\frac{1}{2} \times (2 + 3) \times 25\right) \times 12$$

$$= 125 \times 6 = 750 \text{ m}^3$$

\Rightarrow Ans - (D)

Question 89

Peeyush has done 1/3rd of a job in 30 days, Sanjiv completes the rest of the job in 60 days. In how many days can they together do the job?

A 15 days

B 45 days

C 30 days

D 10 days

Answer: B

Explanation:

Let total work to be done = 90 units

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

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

$$\text{Remaining work} = 90 - 30 = 60 \text{ units}$$

Sanjiv completes 60 units in 60 days

$$\Rightarrow \text{Sanjiv's efficiency} = \frac{60}{60} = 1 \text{ unit/day}$$

$$(\text{Peeyush} + \text{Sanjiv})\text{'s 1 day's work} = 1 + 1 = 2 \text{ units/day}$$

$$\therefore \text{Time taken by them together to do the job} = \frac{90}{2} = 45 \text{ days}$$

\Rightarrow Ans - (B)

Question 90

An angle is twice its complementary angle. What is the measure of the angle?

A 30°

B 90°

C 60°

D 120°

Answer: C

Explanation:

Let the angle = θ

Its complementary angle = (2θ)

Sum of an angle and its complementary angle = 90°

$$\Rightarrow \theta + (2\theta) = 90^\circ$$

$$\Rightarrow 3\theta = 90^\circ$$

$$\Rightarrow \theta = \frac{90}{3} = 30^\circ$$

\therefore Measure of the angle = $2 \times 30 = 60^\circ$

\Rightarrow Ans - (C)

Question 91

The first and last terms of an arithmetic progression are 33 and -57. What is the sum of the series if it has 16 terms?

A -135

B -192

C -207

D -165

Answer: B

Explanation:

In an arithmetic progression with first term, $a = 33$, last term, $l = -57$

Number of terms = $n = 16$

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

$$= \frac{16}{2}(33 - 57)$$

$$= 8 \times (-24) = -192$$

\Rightarrow Ans - (B)

Question 92**27 is 3.6% of?**

- A 750
- B 75
- C 1500
- D 1875

Answer: A**Explanation:**Let the number be x According to ques, 3.6% of $x = 27$

$$\Rightarrow \frac{3.6}{100} \times x = 27$$

$$\Rightarrow x = \frac{2700}{3.6} = \frac{300}{0.4}$$

$$\Rightarrow x = 750$$

 \Rightarrow Ans - (A)**Question 93****In a Kite ____.**

- A Two pairs of consecutive sides are congruent
- B Diagonals are perpendicular bisectors of each other
- C Both diagonals form two congruent triangles
- D Adjacent angles are supplementary

Answer: A**Explanation:**

In a kite two pairs of consecutive sides are congruent i.e. equal in length. Diagonals are perpendicular to each other but do not bisect. Also, adjacent angles are not supplementary.

 \Rightarrow Ans - (A)**Question 94**

The average weight of Sopan, Guruprasad and Rima is 65 kg. If the average weight of Sopan and Guruprasad be 67 kg and that of Guruprasad and Rima be 57 kg, then the weight of Guruprasad is

- A 60

B 53

C 58

D 63

Answer: B

Explanation:

Let respective weights of Sopan, Guruprasad and Rima is s, g, r kg

$$\text{Average weight of the three} = \frac{s+g+r}{3} = 65$$

$$\Rightarrow s + g + r = 65 \times 3 = 195 \text{ kg} \text{ -----(i)}$$

$$\text{Similarly, Total weight of Sopan and Guruprasad} = s + g = 67 \times 2 = 134 \text{ kg} \text{ -----(ii)}$$

$$\text{Total weight of Guruprasad and Rima} = g + r = 57 \times 2 = 114 \text{ kg} \text{ -----(iii)}$$

$$\text{Adding equations(ii) and (iii),} \Rightarrow s + 2g + r = 134 + 114 = 248 \text{ -----(iv)}$$

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

$$\Rightarrow g = 248 - 195 = 53 \text{ kg}$$

\Rightarrow Ans - (B)

Question 95

A bank offers 5% compound interest per half year. A customer deposits Rs. 9600 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 2928

B Rs 1464

C Rs 732

D Rs 366

Answer: B

Explanation:

The interest earned on 9600 from Jan to July will be $9600 \times 5 \times \frac{1}{100}$ (Since rate of interest is 5 % per 6 months)

$$= 96 \times 5 = 480$$

Hence, 9600 will amount to 10,080. He adds another 9600 to this. So the net amount becomes $9600 + 10080 = 19680$.

$$\text{Now interest earned on this amount in a period of 6 months will be } 19680 \times 5 \times \frac{1}{100} = 984$$

So the final amount will be $19680 + 984 = 20664$

Total money he deposited = $9600 + 9600 = 19200$

Hence, amount earned via interest = $20664 - 19200 = \text{Rs } 1464$

=> Ans - (B)

Question 96

By increasing the price of entry ticket to a fair in the ratio 3:5, the number of visitors to the fair has decreased in the ratio 7:2. In what ratio has the total collection increased or decreased?

A increased in the ratio 10:21

B increased in the ratio 6:35

C decreased in the ratio 21:10

D decreased in the ratio 35:6

Answer: C

Explanation:

Let cost of original ticket = Rs 3 and number of visitors = 70

=> Original revenue = $3 \times 70 = \text{Rs } 210$

After increase in cost of ticket

New cost of ticket = Rs 5 and number of visitors = 20

=> New Revenue = $5 \times 20 = \text{Rs } 100$

Since, new revenue is smaller than original revenue, thus total collection has decreased.

\therefore Decrease in total collection ratio = $\frac{210}{100} = 21 : 10$

=> Ans - (C)

Question 97

Refer the below data table and answer the following Question.

Division / Standard	Boys	Girls
Division A / Standard 5	30	30
Division B / Standard 5	20	35
Division C / Standard 5	40	35
Division A / Standard 6	35	15
Division B / Standard 6	10	10
Division C / Standard 6	35	40

What is the ratio of boys to girls?

A 36 : 35

B 33 : 34

C 34 : 33

D 35 : 36

Answer: C

Explanation:

Total number of boys = $30 + 20 + 40 + 35 + 10 + 35 = 170$

Total number of girls = $30 + 35 + 35 + 15 + 10 + 40 = 165$

=> Required ratio = $\frac{170}{165}$

= 34 : 33

=> Ans - (C)

Question 98

Refer the below data table and answer the following Question.

Marks	Number of Students
40 and above	21
30 and above	39
30 and above	67
10 and above	92
0 and above	108

How many students have scored marks 20 or more but less than 40?

A 67

B 39

C 106

D 46

Answer: D

Explanation:

Number of students who scored :

40 and above = 21

30 and above = $39 - 21 = 18$

20 and above = $67 - 39 = 28$

10 and above = $92 - 67 = 25$

0 and above = $108 - 92 = 16$

=> Students who have scored marks 20 or more but less than 40 = 28 + 18 = 46

=> Ans - (D)

Question 99

Refer the below data table and answer the following Question.

Year	GDP growth rate for the year (in %)
2011	7
2012	6
2013	-6
2014	-8
2015	-6

If the GDP of the country was \$8 trillion at the end of 2013, what was it at the beginning of 2015?

A \$7.36 trillion

B \$8.48 trillion

C \$7.52 trillion

D \$7.84 trillion

Answer: A

Explanation:

GDP at the beginning of 2015 is equal to the GDP at the end of 2014

=> GDP growth rate in 2014 = -8%

GDP at the end of 2013 = GDP at the beginning of 2014 = \$8 trillion

∴ GDP at the beginning of 2015 = $\frac{100-8}{100} \times 8$ trillion

= $\frac{184}{25}$ = \$7.36 trillion

=> Ans - (A)

Question 100

Refer the below data table and answer the following Question.

Subjects	Marks Scored
English	80
Hindi	45
Math	55
Science	60
Arts	65

Five points are to be deducted from this students average of marks scored because of poor attendance. What will be this student's net average marks scored ?

A 51

B 46

C 61

D 56

Answer: D

Explanation:

Total marks scored by the student = $80 + 45 + 55 + 60 + 65 = 305$

=> Average marks = $\frac{305}{5} = 61$

But due to poor attendance, 5 marks are deducted

∴ Net average = $61 - 5 = 56$

=> Ans - (D)