

SSC CHSL 17 Jan 2017 Morning Shift

English

Instructions

For the following questions answer them individually

Question 1

Select the antonym of to spurn

- A to accept
- B to flout
- C to scorn
- D to rebuff

Answer: A

Question 2

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.:

"I'm off to the games. Where are you going?"

- A He said he would be off to the games and wanted to know where I was going.
- B He said he was going off to the games and wanted to know where I was planning to go.
- C He said he is going off to the games and asked me where I was planning to go.
- D He said that he was off to the games and wanted to know where I was going.

Answer: D

Question 3

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

Familiarity breeds contempt

- A close association with someone leads to a loss of respect for them
- B if you do an undesirable thing daily then it becomes acceptable
- C too many people living closely will eventually cause bitterness

D routine has to be broken to bring excitement to life

Answer: A

Question 4

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

a symbol that serves as an emblem of a group of people

A obelisk

B minaret

C mast

D totem

Answer: D

Question 5

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

Don't put all your eggs in one basket

A avoid risky ventures if you want to be successful in life

B don't risk everything on the success of one venture

C one should try multiple things, at least one will succeed

D those who are blessed with more children are happier

Answer: B

Question 6

Select the antonym of to conceive

A to reckon

B to neglect

C to apprehend

D to perceive

Answer: B

Question 7

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 criminal was released onfor a few days so that he could spend time with his ailing mother.

A parole

B guarantee

C grant

D mercy

Answer: A

Question 8

Improve the bracketed part of the sentence.

We don't need our computers to be infinitely fast, just a whole lot (faster than) they are today.

A as fast as

B faster than

C more faster than

D no improvement

Answer: D

Question 9

Rearrange the parts of the sentence in correct order.

Their judgment can be

P-easily swayed by false

Q-propaganda, as is being done

R-right now across the country

A QRP

B RPQ

C PRQ

D PQR

Answer: D

Question 10

Select the word with the correct spelling.

A adhision

B fundango

C canabis

D closeted

Answer: D

Question 11

Select the synonym of rendezvous

A tryst

B dispersal

C rift

D split

Answer: A

Question 12

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.

I read the story in one night.

A The story had been read by me in one night.

B The story has been read by me in one night.

C In one night the story has been read by me.

D The story was read by me in one night.

Answer: D

Question 13

Improve the bracketed part of the sentence. The teacher did not ask (any questions to Rinky).

- A any questions of Rinky
- B to Rinky any questions
- C Rinky any questions
- D no improvement

Answer: C

Question 14

Select the word with the correct spelling.

- A dievorce
- B carapase
- C usefully
- D shufles

Answer: C

Question 15

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'.

Being occupied with(A)/work, father had no(B)/time to see us(C)/No error(D)

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

Answer: D

Question 16

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

The employee had becometo both the manager's praise as well as reprimand.

- A hardened
- B indifferent
- C hostile
- D immune

Answer: B

Question 17

Select the synonym of defuse

- A irritate
- B alleviate
- C agitate
- D incite

Answer: B

Question 18

Rearrange the parts of the sentence in correct order.

Although no convincing

P-arguments were made against

Q-was commotion in the House

R-the amendment, there

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

Answer: C

Question 19

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'.

Visitors to the zoo(A)/are amused by the monkeys(B)/play in the cages.(C)/No error(D)

A A

B B

C C

D D

Answer: C

Question 20

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

to leave a place suddenly or secretly.

A scarce

B ligger

C decamp

D loiter

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.

Equally disappointing is the court's , one-paragraph dismissal of the claim that criminalcreates a chilling effect upon speech. Such proclamations are easyfrom the high, secure, and insulated bench of the Supreme Court. It is journalists and newspapers, fighting hundreds ofcases in court,have to deal with the very real consequences.

Question 21

Equally disappointing is the court's,

A cursory

B shortened

C tiny

D slight

Answer: A

Question 22

criminalcreates a chilling effect upon speech

A defamating

B defamation

C defamate

D defamations

Answer: B

Question 23

Such proclamations are easyfrom the high

A making

B made

C for making

D to make

Answer: D

Question 24

It is journalists and newspapers, fighting hundreds ofcases in court

A imaginary

B frivolous

C unintelligible

D ordinary

Answer: B

Question 25

.....have to deal with the very real consequences.

- A whom
- B which
- C who
- D those

Answer: C

Reasoning

Instructions

For the following questions answer them individually

Question 26

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

Land of the Rising Sun : Japan : : The Land of the Thunder Dragon : ?

- A Bhutan
- B Pakistan
- C India
- D Sri Lanka

Answer: A

Explanation:

Japan is known as the Land of the Rising Sun, similarly, *Bhutan* is known as The Land of the Thunder Dragon because of the large thunderstorms that whip down through the valleys from the Himalayas.

=> Ans - (A)

Question 27

Select the related word/letters/number from the given alternatives. CD : PQ : : GH : ?

- A RS

B TU

C UV

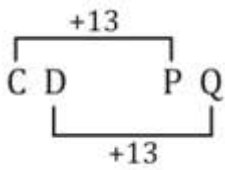
D WX

Answer: B

Explanation:

Expression = CD : PQ :: GH : ?

The pattern followed is :



Similarly, GH (+13) : TU

=> Ans - (B)

Question 28

Select the related word/letters/number from the given alternatives. EF : JA :: NO : ?

A TI

B RK

C SJ

D HU

Answer: C

Explanation:

Expression = EF : JA :: NO : ?

The pattern followed is :



Similarly, NO : SJ

=> Ans - (C)

Question 29

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

17 : 493 :: ? : 551

A 13

B 21

C 19

D 23

Answer: C

Explanation:

Expression = $17 : 493 :: ? : 551$

The pattern followed is = $x : 29x$

Eg :- $17 : 29 \times 17 = 17 : 493$

Similarly, $\frac{551}{29} = 19$

=> Ans - (C)

Question 30

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

A Bismillah Khan

B C. V. Raman

C Homi Jehangir Bhabha

D Vikram Sarabhai

Answer: A

Explanation:

Except Bismillah Khan other three are related to the field of science, hence he is the odd one out.

=> Ans - (A)

Question 31

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

A VR

B LH

C SW

D FB

Answer: C

Explanation:

(A) : V (-4 letters) = R

(B) : L (-4 letters) = H

(C) : S (+4 letters) = W

(D) : F (-4 letters) = B

=> Ans - (C)

Question 32

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

A 863

B 785

C 791

D 647

Answer: B

Explanation:

Sum of digits of numbers is 17, but $7 + 8 + 5 = 20$, hence it is the odd one out.

=> Ans - (B)

Question 33

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

A 3284

B 4058

C 2137

D 2363

Answer: D

Explanation:

Product of last two digits is equal to the first two digits, but $6 \times 3 \neq 23$, hence it is the odd one out.

=> Ans - (D)

Question 34

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. Mesopotamian civilization, Egyptian civilization, ? , Chinese civilization

- A Greek civilization
- B Roman civilization
- C Persian civilization
- D Indus valley civilization

Answer: D

Explanation:

Civilizations as per their timeline in increasing order.

= Mesopotamian civilization -> Egyptian civilization -> Indus valley civilization -> Chinese civilization

=> Ans - (D)

Question 35

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. TUW, ZAC, FGI, LMO, ?

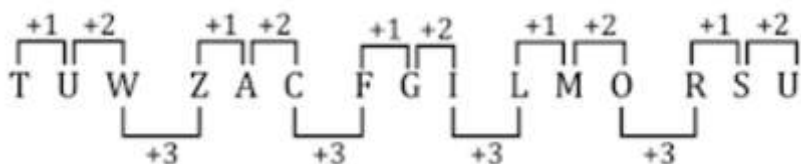
- A PQS
- B RSU
- C QRT
- D UVX

Answer: B

Explanation:

Expression : TUW, ZAC, FGI, LMO, ?

The pattern followed is :



Thus, missing term = **RSU**

=> Ans - (B)

Question 36

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. NO, QR, UV, ZA, ?

A EF

B DE

C FG

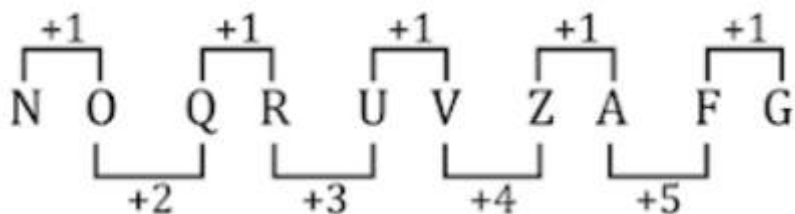
D GH

Answer: C

Explanation:

Expression : NO, QR, UV, ZA, ?

The pattern followed is :



Thus, missing term = FG

=> Ans - (C)

Question 37

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

7, 13, 21, 31, 43, 57, ?

A 73

B 83

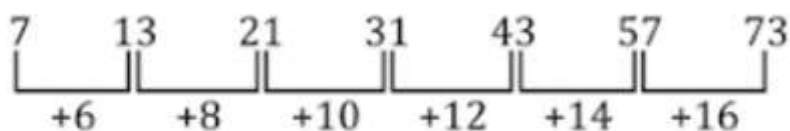
C 78

D 63

Answer: A

Explanation:

Even numbers are added.



Thus, missing number = 73

=> Ans - (A)

Question 38

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

Statements:

- (I) All fans are cups.
- (II) All cups are pillows.

Conclusion:

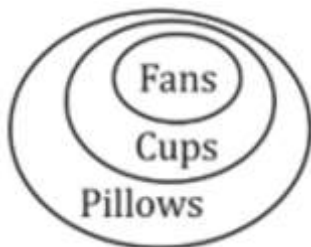
- (I) All fans are pillows.
- (II) All pillows are fans.

- 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) All fans are pillows = true
- (II) All pillows are fans = false

Thus, only conclusion I follows

=> Ans - (A)

Question 39

If 5th January 2011 was a Thursday, then what day of the week was it on 1st January 2013 ?

- A Thursday
- B Wednesday

C Tuesday

D Monday

Answer: B

Explanation:

Number of odd days in a non-leap year = 1 and number of odd days in a leap year = 2

It is given that 5th January 2011 = Thursday

=> Day on 31st December 2010 = Saturday

Now, number of odd days from year 2011 to 2012 = $(1 + 2) = 3$

=> Day on 31st December 2012 = Saturday (+3) = Tuesday

∴ On 1st January 2013, it was **Wednesday**.

=> Ans - (B)

Question 40

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

i. Next

ii. Noisy

iii. Neutral

iv. Neither

A iii, iv, i, ii

B i, iv, iii, ii

C ii, iii, i, iv

D iv, iii, i, ii

Answer: D

Explanation:

As per the order of dictionary :

= Neither -> Neutral -> Next -> Noisy

≡ iv, iii, i, ii

=> Ans - (D)

Question 41

In a certain code language, "TERMITE" is written as "UDSLJSF". How is "MINISTER" written in that code language?

A NHOHSTFQ

B NHHOTSFQ

C NHOHTSFQ

D NHOHTSQF

Answer: C

Explanation:

"TERMITE" is written as "UDSLJSF"

The pattern followed is :

T	E	R	M	I	T	E
+1↓	+1↑	+1↓	+1↑	+1↓	+1↑	+1↓
U	D	S	L	J	S	F

Similarly, for MINISTER : NHOHTSFQ

=> Ans - (C)

Question 42

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

T	R	H
D	M	W
48	62	?

A 70

B 62

C 64

D 68

Answer: B

Explanation:

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

=> T=20 and D=4 => $(20 + 4) \times 2 = 48$

R=18 and M=13 => $(18 + 13) \times 2 = 62$

Similarly, H=8 and W=23 => $(8 + 23) \times 2 = 62$

=> Ans - (B)

Question 43

If "A" denotes "added to", "B" denotes "divided by", "C" denotes "multiplied by" and "D" denotes "subtracted from", then

$$87 \text{ B } 3 \text{ C } 4 \text{ A } 4 \text{ D } 50 = ?$$

A 65

B 75

C 70

D 80

Answer: C

Explanation:

Expression : $87 \text{ B } 3 \text{ C } 4 \text{ A } 4 \text{ D } 50 = ?$

$$\equiv 87 \div 3 \times 4 + 4 - 50$$

$$= (29 \times 4) - 46$$

$$= 116 - 46 = 70$$

=> Ans - (C)

Question 44

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

M_Q_C_M_Q_CM

A QCMCQ

B CQMCQ

C CQCMQ

D CQMQC

Answer: B

Explanation:

The pattern followed is that in groups of 3, the term 'MCQ' is alternatively repeated with its reverse.

$$= \text{MCQ QCM MCQ QCM}$$

=> Ans - (B)

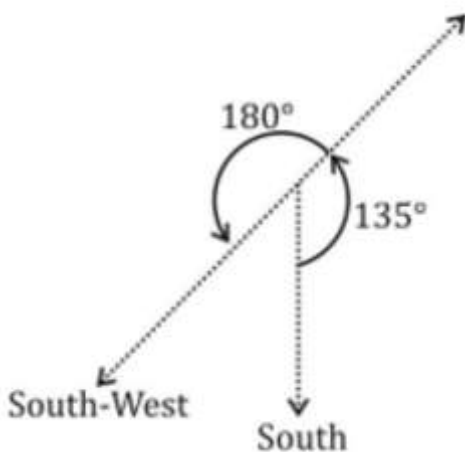
Question 45

A girl is standing facing towards the south. She turns 135 degree in the anticlockwise direction and then again takes a 180 degree turn in the anticlockwise direction. Which direction is she facing now ?

- A South-west
- B South
- C South-east
- D West

Answer: A

Explanation:



The girl is initially facing towards the south. She turns 135 degree in the anticlockwise direction and faces north-east, then again takes a 180 degree turn in the anticlockwise direction.

Finally, she is facing south-west.

=> Ans - (A)

Question 46

Word A is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example, F can be represented by 32, 42, etc., and M can be represented by 88, 68, etc. Similarly, you have to identify the set for the word WATER.

Matrix - I

	0	1	2	3	4
0	R	N	W	H	T
1	W	I	N	T	L
2	L	G	W	N	R
3	R	T	F	I	W
4	T	L	F	N	R

Matrix - II

	5	6	7	8	9
5	I	E	D	A	O
6	A	I	I	M	E
7	R	A	G	I	O
8	D	D	T	M	I
9	E	E	D	M	A

A 34, 65, 13, 85, 44

B 10, 76, 31, 86, 11

C 22, 99, 40, 95, 30

D 02, 58, 89, 69, 75

Answer: C

Explanation:

(A) : 34, 65, 13, 85, 44 = WATDR

(B) : 10, 76, 31, 86, 11 = WATDI

(C) : 22, 99, 40, 95, 30 = **WATER**

(D) : 02, 58, 89, 69, 75 = WAIER

=> Ans - (C)

Question 47

Preeti is the daughter of Rajesh and Amit is the son of Ankita. Rajesh is the only son of Rajan. Ankita is the daughter-in-law of Rajan. How is Preeti related to Amit ?

A Sister

B Mother

C Cousin

D Aunt

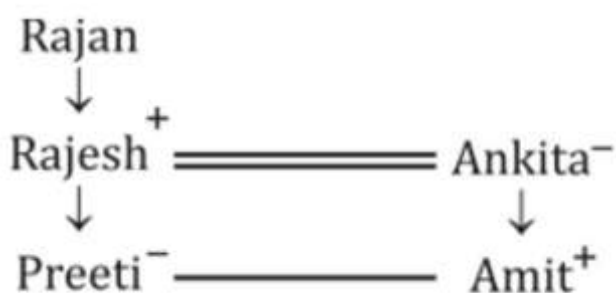
Answer: A

Explanation:

Ankita is the daughter-in-law of Rajan.

Rajesh is the only son of Rajan, => Ankita and Rajesh are married.

Preeti is the daughter of Rajesh and Amit is the son of Ankita, => Preeti and Amit are siblings.

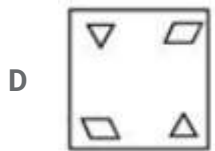
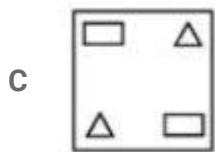
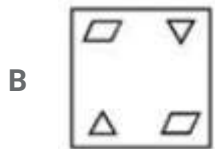
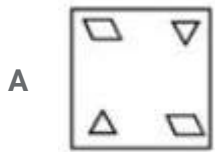
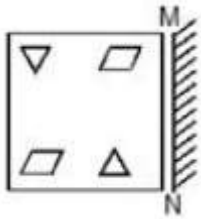


Thus, Preeti is the sister of Amit.

=> Ans - (A)

Question 48

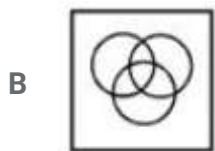
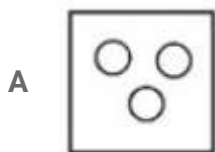
If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure ?

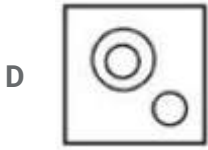
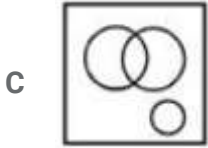


Answer: B

Question 49

Identify the diagram that best represents the relationship among the given classes. College, University, Students

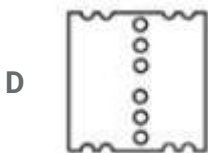
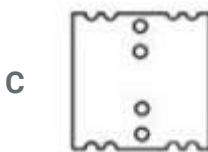
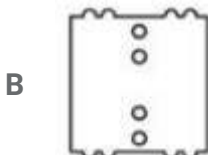
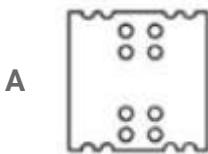
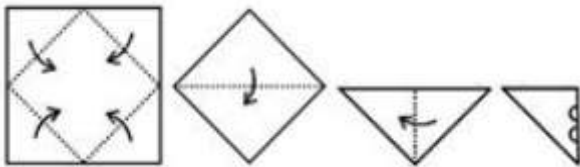




Answer: D

Question 50

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



Answer: C

General Awareness

Instructions

For the following questions answer them individually

Question 51

Which of these monuments enshrines the tomb containing the relics of St. Francis Xavier?

- A Basilica of Bom Jesus
- B Se Cathedral
- C Monte Hill
- D St. Alex Church

Answer: A

Question 52

Name the first Indian to get Nobel prize in economics.

- A Amartya Sen
- B C V Raman
- C Mihir Sen
- D Arun Shourie

Answer: A

Question 53

Which compound is used in Anti-malarial drug?

- A Aspirin
- B Neosporin
- C Chloroquin
- D Antacid

Answer: C

Question 54

Which of these is not a macronutrient for Plants?

- A Nitrogen

B Phosphorus

C Potassium

D Chlorine

Answer: D

Question 55

Name the respiratory organs of insects

A Skin

B Body Surface

C Gills

D Tracheae

Answer: D

Question 56

Which of the following elements has the lowest melting point?

A Platinum

B Carbon

C Cobalt

D Krypton

Answer: D

Question 57

Which among the following compounds has the best hydrogen bond?

A HI

B HCl

C HF

D HBr

Answer: C

Question 58

A set of instructions executed directly by a computer's central processing unit is

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

Answer: B

Question 59

Khasi tribes live in

- A** Meghalaya
- B** Assam
- C** Rajasthan
- D** Madhya Pradesh

Answer: A

Question 60

In 2015, the real rate of interest in a country was 6% and the inflation rate then was 3%. So the nominal rate of interest in 2015 was

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

Answer: C

Question 61

In perfect competition a firm maximizes profit by

- A setting price such that price is equal to or greater than its marginal costs
- B setting output such that price equals average total costs
- C setting output such that price equals marginal costs
- D setting price so that it is greater than marginal cost

Answer: C

Question 62

Ozone hole is caused by chemicals like

- A Nitrogen Oxide
- B Hydrogen Sulphide
- C Chloro Fluoro Carbon
- D Carbon Monoxide

Answer: C

Question 63

The poisonous gas accidentally released in Bhopal Gas Tragedy is

- A Methane
- B Nitrous Oxide
- C Methyl Isocyanate
- D Cyanogen

Answer: C

Question 64

Which country has the most coal reserves?

- A Russia

- B** India
- C** China
- D** USA

Answer: D

Question 65

Venus is theplanet from the Sun.

- A** 2nd
- B** 4th
- C** 6th
- D** 8th

Answer: A

Question 66

What is the capital of Australia?

- A** Copenhagen
- B** Canberra
- C** Athens
- D** Helsinki

Answer: B

Question 67

Ashoka was an emperor of theDynasty.

- A** Mughal
- B** Chola
- C** Maurya
- D** Gupta

Answer: C

Question 68

Which Mughal emperor imprisoned his father and executed his brother?

- A Babur
- B Humayun
- C Aurangzeb
- D Shah Alam II

Answer: C

Question 69

Piano was invented by

- A John Barber
- B Sir Henry Cole
- C Josephine Cochrane
- D Bartolomeo Cristofori

Answer: D

Question 70

What is the viscosity of an ideal fluid?

- A Equal to its mass
- B Equal to its weight
- C Zero
- D One

Answer: C

Question 71

The SI unit of intensity of sound is

- A watt per square meter
- B joule per square meter
- C newton per square meter
- D tesla per square meter

Answer: A

Question 72

Indian Constitution has how many Schedules?

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

Answer: B

Question 73

Who was the first Deputy Speaker of Lok Sabha?

- A G. V. Mavalankar
- B Sarvepalli Radhakrishnan
- C M. Ananthasayanam Ayyangar
- D Dr P V Cherian

Answer: C

Question 74

Martin Crowe was a cricketer of which country?

- A Australia
- B New Zealand
- C England

D South Africa

Answer: B

Question 75

Who wrote the book "Untouchable"?

A Premchand

B Sarojini Naidu

C K Natwar Singh

D Mulk Raj Anand

Answer: D

Mathematics

Instructions

For the following questions answer them individually

Question 76

The bus fare between two cities is increased in the ratio 1:2. Find the increase in the fare, if the original fare is Rs. 175.

A Rs 350

B Rs 70

C Rs 140

D Rs 175

Answer: D

Explanation:

Let original fare = Rs. x

=> New fare = Rs. $2x$

Also, original fare = 175 = x

∴ Increase in fare = $2x - x = x$

= $1 \times 175 = Rs.175$

=> Ans - (D)

Question 77

On dividing a number by 47, we get 75 as quotient and 18 as remainder. What is the number?

A 3507

B 3543

C 3489

D 3561

Answer: B

Explanation:

Let the number be x

Dividend = Divisor \times Quotient + Remainder

$$\Rightarrow x = (47 \times 75) + 18$$

$$= 3525 + 18 = 3543$$

\Rightarrow Ans - (B)

Question 78

The sum of $2xy(3x + 4y - 5z)$ and $5yz(2x - 3y)$ is

A $6x^2y - 8xy^2 + 15y^2z$

B $6x^2y + 8xy^2 - 15y^2z$

C $6x^2y + 8xy^2 - 15y^2z - 20xyz$

D $6x^2y - 8xy^2 + 15y^2z + 20xyz$

Answer: B

Explanation:

Sum of $2xy(3x + 4y - 5z)$ and $5yz(2x - 3y)$

$$= (6x^2y + 8xy^2 - 10xyz) + (10xyz - 15y^2z)$$

$$= 6x^2y + 8xy^2 - 15y^2z$$

\Rightarrow Ans - (B)

Question 79

The length, breadth and height of a cuboid are 10 cm, 6 cm and 4 cm respectively. What is the total surface area?

- A 248 sq cms
- B 496 sq cms
- C 124 sq cms
- D 372 sq cms

Answer: A

Explanation:

Dimensions of cuboid $l = 10$ cm, $b = 6$ cm and $h = 4$ cm

$$\text{Total surface area of cuboid} = 2(lb + bh + hl)$$

$$= 2[(10 \times 6) + (6 \times 4) + (4 \times 10)]$$

$$= 2(60 + 24 + 40)$$

$$= 2 \times 124 = 248 \text{ cm}^2$$

=> Ans - (A)

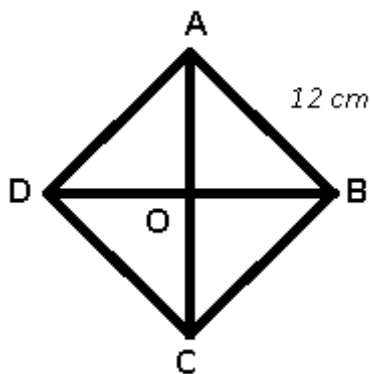
Question 80

One internal angle of a rhombus of side 12 cm is 120° . What is the length of its longer diagonal?

- A $6\sqrt{3}$ cm
- B $12\sqrt{2}$ cm
- C $6\sqrt{2}$ cm
- D $12\sqrt{3}$ cm

Answer: D

Explanation:



Given : ABCD is a rhombus with $AB = 12$ cm and $\angle ABC = 120^\circ$

To find : $AC = ?$

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

$$\Rightarrow \angle OBA = 60^\circ$$

$$\text{In } \triangle AOB, \sin(\angle OBA) = \frac{OA}{AB}$$

$$\Rightarrow \sin(60) = \frac{OA}{12}$$

$$\Rightarrow \frac{\sqrt{3}}{2} = \frac{OA}{12}$$

$$\Rightarrow OA = 6\sqrt{3} \text{ cm}$$

Since, the diagonals bisect each other, $\Rightarrow AC = 2 \times (OA)$

$$= 2 \times 6\sqrt{3} = 12\sqrt{3} \text{ cm}$$

\Rightarrow Ans - (D)

Question 81

There is 40% increase in an amount in 5 years at simple interest. What will be the compound interest of Rs. 25000 after 3 years at the same rate?

A Rs 6492.8

B Rs 12985.6

C Rs 16232

D Rs 9739.2

Answer: A

Explanation:

Let the principal = Rs. $100x$

$$\Rightarrow \text{Amount after simple interest} = \frac{140}{100} \times 100 = \text{Rs. } 140x$$

$$\Rightarrow \text{Simple interest} = 140x - 100x = \text{Rs. } 40x$$

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

$$\Rightarrow 40x = \frac{100x \times 5 \times R}{100}$$

$$\Rightarrow R = \frac{40}{5} = 8\%$$

$$\text{Compound interest of Rs. 25,000 for 3 years} = P \left[\left(1 + \frac{R}{100} \right)^T - 1 \right]$$

$$= 25,000 \left[\left(1 + \frac{8}{100} \right)^3 - 1 \right]$$

$$= 25,000 \left[\left(\frac{27}{25} \right)^3 - 1 \right]$$

$$= 25,000 \times \frac{19683 - 15625}{(25)^3} = 4058 \times \frac{8}{5}$$

$$= 4058 \times 1.6 = \text{Rs } 6492.8$$

\Rightarrow Ans - (A)

Question 82

Suresh goes on a trip on his motor-cycle and rides for 410 kms. If he rides for 5 hours at a speed of 50 km/hr, find at what speed he travels for the remaining 4 hours of the journey?

- A 47 km/hr
- B 40 km/hr
- C 56 km/hr
- D 48 km/hr

Answer: B

Explanation:

Total distance covered = 410 km

He rides for 5 hours at a speed of 50 km/hr

=> Distance covered = $5 \times 50 = 250$ km

Distance left = $410 - 250 = 160$ km

∴ Speed he should travel for the remaining 4 hours of the journey = $\frac{160}{4} = 40$ km/hr

=> Ans - (B)

Question 83

If the radius of a circle is increased by 25%, its area increases by:

- A 50 percent
- B 25 percent
- C 28.125 percent
- D 56.25 percent

Answer: D

Explanation:

Let radius = 10 cm

=> Area of circle = $\pi(10)^2 = 100\pi$ sq. cm

If radius is increased by 25%, => New radius = $10 + \frac{25}{100} \times 10 = 12.5$ cm

New area = $\pi(12.5)^2 = 156.25\pi$ sq. cm

=> % increase in area = $\frac{156.25-100}{100} \times 100$

$$= 56.25\%$$

=> Ans - (D)

Question 84

A shopkeeper, sold cashew nuts at the rate Rs 1,260 a kg and bears a loss of 8%. Now if he decides to sell it at Rs 1,386 per kg, what will be the result?

A 1.2 percent gain

B 2.4 percent gain

C 1.2 percent loss

D 2.4 percent loss

Answer: A

Explanation:

Let cost price of 1 kg of cashew nuts = $Rs. x$

If Selling price of 1 kg of cashew nuts = Rs. 1260

$$\Rightarrow \text{Loss \%} = \frac{x-1260}{x} \times 100 = 8$$

$$\Rightarrow \frac{x-1260}{x} = \frac{8}{100} = \frac{2}{25}$$

$$\Rightarrow 25x - 31500 = 2x$$

$$\Rightarrow 25x - 2x = 23x = 31500$$

$$\Rightarrow x = \frac{31500}{23} \approx 1369.5$$

When selling price = Rs. 1386

$$\Rightarrow \text{Profit \%} = \frac{1386-1369.5}{1369.5} \times 100$$

$$= \frac{1650}{1369.5} \approx 1.2\%$$

=> Ans - (A)

Question 85

If $\frac{(1-\sin A)}{(1+\sin A)} = x$, then x is

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

B $\sec A - \tan A$

C $(\sec A - \tan A)^2$

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

Answer: C

Explanation:

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

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

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

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

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

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

=> Ans - (C)

Question 86

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

A 22.5°

B 135°

C 45°

D 67.5°

Answer: D

Explanation:

Let the angle = θ

Its complementary angle = (3θ)

Sum of an angle and its complementary angle = 90°

$$\Rightarrow \theta + (3\theta) = 90^\circ$$

$$\Rightarrow 4\theta = 90^\circ$$

$$\Rightarrow \theta = \frac{90}{4} = 22.5^\circ$$

\therefore Measure of the angle = $3 \times 22.5 = 67.5^\circ$

=> Ans - (D)

Question 87

What is the length of the side of an equilateral triangle, if its area is $36\sqrt{3}$ sq cm?

A 6 cm

B 24 cm

C 12 cm

D 18 cm

Answer: C

Explanation:

Let the side of equilateral triangle = a cm

$$\text{Area} = \frac{\sqrt{3}}{4} \times (a)^2 = 36\sqrt{3}$$

$$\Rightarrow (a)^2 = 36 \times 4 = 144$$

$$\Rightarrow a = \sqrt{144} = 12 \text{ cm}$$

\Rightarrow Ans - (C)

Question 88

If $\frac{\cos\pi}{4} - \frac{\tan\pi}{4} = x$, then x is

A $\frac{\sqrt{3}+4}{2\sqrt{3}}$

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

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

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

Answer: C

Explanation:

$$\text{Expression: } \frac{\cos\pi}{4} - \frac{\tan\pi}{4} = x$$

$$= \cos(45) - \tan(45)$$

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

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

\Rightarrow Ans - (C)

Question 89

If $\tan A = x$, then x is

A $\sqrt{(\operatorname{cosec}^2 A + 1)}$

B $\sqrt{(\sec^2 A + 1)}$

C $\sqrt{(\operatorname{cosec}^2 A - 1)}$

D $\sqrt{(\sec^2 A - 1)}$

Answer: D

Explanation:

We know that, $\sec^2 A - \tan^2 A = 1$

$$\Rightarrow \tan^2 A = \sec^2 A - 1$$

$$\Rightarrow \tan A = \sqrt{\sec^2 A - 1}$$

\Rightarrow Ans - (D)

Question 90

If the shopkeeper sells an item at Rs 1250 which is marked as Rs 1500, then what is the discount he is offering?

A 20 percent

B 16.67 percent

C 25 percent

D 10 percent

Answer: B

Explanation:

Marked Price = Rs. 1500

Selling price = Rs. 1250

$$\Rightarrow \text{Discount \%} = \frac{(1500-1250)}{1500} \times 100 = \frac{250}{15}$$

$$= \frac{50}{3} = 16.67\%$$

\Rightarrow Ans - (B)

Question 91

The slopes of two lines are 1 and $\sqrt{3}$. 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 $m_2 = \sqrt{3}$

Let angle between them = θ

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

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

$$\Rightarrow \tan(\theta) = \frac{\tan(60) - \tan(45)}{1 + \tan(60)\tan(45)}$$

$$\Rightarrow \tan(\theta) = \tan(60 - 45) \quad \because [\tan(A - B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}]$$

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

\Rightarrow Ans - (A)

Question 92

Parimal has done 1/4th of a job in 10 days, Salim completes the rest of the job in 20 days. In how many days can they together do the job?

A 8 days

B 24 days

C 12 days

D 16 days

Answer: D

Explanation:

Let total work to be done = 80 units

Work done by Parimal in 10 days = $\frac{1}{4} \times 80 = 20$ units

Parimal's efficiency = $\frac{20}{10} = 2$ units/day

Remaining work = $80 - 20 = 60$ units

Salim completes 60 units in 20 days

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

(Parimal + Salim)'s 1 day's work = $2 + 3 = 5$ units/day

\therefore Time taken by them together to do the job = $\frac{80}{5} = 16$ days

\Rightarrow Ans - (D)

Question 93

If $4x - 7 < x - 2$ and $5x + \frac{2}{3} \geq 3x + 1$; then x can take which of the following values?

A 2

B -1

C -2

D 1

Answer: D

Explanation:

Expression 1 : $4x - 7 < x - 2$

$$\Rightarrow 4x - x < 7 - 2$$

$$\Rightarrow 3x < 5$$

$$\Rightarrow x < \frac{5}{3} \text{ -----(i)}$$

Expression 2 : $5x + \frac{2}{3} \geq 3x + 1$

$$\Rightarrow 5x - 3x \geq 1 - \frac{2}{3}$$

$$\Rightarrow 2x \geq \frac{1}{3}$$

$$\Rightarrow x \geq \frac{1}{6} \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $\frac{1}{6} \leq x < \frac{5}{3}$

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

\Rightarrow Ans - (D)

Question 94

The sum of the ages of brother and sister at present is 21. Five years ago the product of their ages was 28. What is the age of the brother and the sister?

A 9, 12

B 6, 15

C 7, 14

D 8, 13

Answer: A

Explanation:

Let the age of brother = x years and sister's age = $(21 - x)$ years

Product of their ages 5 years ago = $(x - 5)(21 - x - 5) = 28$

$$\Rightarrow (x - 5)(16 - x) = 28$$

$$\Rightarrow 16x - x^2 - 80 + 5x = 28$$

$$\Rightarrow x^2 - 21x + 108 = 0$$

$$\Rightarrow x^2 - 9x - 12x + 108 = 0$$

$$\Rightarrow x(x - 9) - 12(x - 9) = 0$$

$$\Rightarrow (x - 12)(x - 9) = 0$$

$$\Rightarrow x = 12, 9$$

∴ Ages of brother and sister are 12 and 9

⇒ Ans - (A)

Question 95

The solution set of $4x - 3y = 47$ and $3x + y = 32$ is

A $\{(15, 3)\}$

B $\{(4, 12)\}$

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

D $\{(12, 3)\}$

Answer: C

Explanation:

Equation 1 : $4x - 3y = 47$

Equation 2 : $3x + y = 32$

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

$$\Rightarrow (4x + 9x) + (-3y + 3y) = (47 + 96)$$

$$\Rightarrow 13x = 143$$

$$\Rightarrow x = \frac{143}{13} = 11$$

Substituting it in equation (ii), $\Rightarrow y = 32 - 3(11) = 32 - 33 = -1$

$$\therefore (x, y) = (11, -1)$$

⇒ Ans - (C)

Question 96

In a class of 55 students there are 34 girls. The average weight of these girls is 51 Kg and average weight of the full class is 55.2 kgs. What is the average weight of the boys of the class?

A 62

B 59.4

C 56.8

D 60

Answer: A

Explanation:

Total number of students = 55 and number of girls = 34

=> Number of boys in class = 55 - 34 = 21

Average weight of girls = 51 kg

=> Total weight of girls = $51 \times 34 = 1734$ kg

Similarly, total weight of full class = $55.2 \times 55 = 3036$ kg

=> Total weight of boys = 3036 - 1734 = 1302 kg

∴ Average weight of boys = $\frac{1302}{21} = 62$ kg

=> Ans - (A)

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	3	54	40%
Executive	5	12	30%
Trainee	5	2	20%

What is the average bonus (in rupees)?

A 848000

B 226667

C 256000

D 652308

Answer: D

Explanation:

Total bonus of managers (in lakh) = $3 \times 54 \times \frac{40}{100} = 64.8$ lakhs

Total bonus of executive (in lakh) = $5 \times 12 \times \frac{30}{100} = 18$ lakhs

Total bonus of trainee (in lakh) = $5 \times 2 \times \frac{20}{100} = 2$ lakhs

=> Average bonus in rupees = $\frac{(64.8+18+2)}{(3+5+5)}$

$$= \frac{84.8}{13} = 6.52308 \text{ lakhs} = 6,52,308$$

=> Ans - (D)

Question 98

Refer the below data table and answer the following Question.

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

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

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

Answer: B

Explanation:

Total exports from the three companies together in :

$$2011 = 1000 + 3000 + 1000 = 5000$$

$$2012 = 4000 + 5000 + 4000 = 13000$$

$$2013 = 5000 + 2000 + 4000 = 11000$$

$$2014 = 5000 + 5000 + 1000 = 11000$$

$$2015 = 5000 + 3000 + 1000 = 9000$$

Clearly, total exports in 2013 and 2014 are equal to 11000

=> Ans - (B)

Question 99

Refer the below data table and answer the following Question.

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

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

- A Profit of Rs 45 crores
- B Profit of Rs 55 crores
- C Loss of Rs 45 crores
- D Loss of Rs 55 crores

Answer: A

Explanation:

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

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

$$= 45$$

Since, it is positive, thus profit of Rs. 45 crore

=> Ans - (A)

Question 100

Refer the below data table and answer the following Question.

India's Exports in 2015	Value in Million US\$
Jewellery	600
Software	675
Cotton	800
Steel	775
Electronics	525

Software was what percent of total exports?

- A 20 percent
- B 22.5 percent

C 25 percent

D 17.5 percent

Answer: A

Explanation:

Value in millions of Software = 675

Total exports = 600 + 675 + 800 + 775 + 525 = 3375

=> % of Software in total exports = $\frac{675}{3375} \times 100$

= $\frac{2700}{135} = 20\%$

=> Ans - (A)

SSC CHSL 17 Jan 2017 Afternoon Shift

General Awareness

Instructions

For the following questions answer them individually

Question 1

How many layers are there in the OSI networking model?

A 13

B 11

C 9

D 7

Answer: D

Question 2

Christmas Card was invented by _____.

A John Barber

B Sir Henry Cole

C Josephine Cochrane

D Bartolomeo Cristofori

Answer: B

Question 3

What does Trypsin do?

A Breaks down Carbohydrates

B Synthesizes proteins

C Breaks down fats

D Breaks down proteins

Answer: D

Question 4

Name the source from which Aspirin is produced?

- A Willow bark
- B Oak Tree
- C Acacia
- D Eucalyptus

Answer: A

Question 5

Cannis Familiaris is the scientific name of

- A Cat
- B Dog
- C Fox
- D Wolf

Answer: B

Question 6

Name the acid present in lemon.

- A Phosphoric acid
- B Carbonic acid
- C Citric acid
- D Malic acid

Answer: C

Question 7

The conversion of hard water into soft water by boiling or adding calcium hydroxide is called _____.

- A Baker's process

- B Temp's process
- C Clarke's process
- D Lake's process

Answer: C

Question 8

Group of Monuments at Pattadakal is in

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

Answer: C

Question 9

2016 Hemis festival was held in _____.

- A Manipur
- B Jammu and Kashmir
- C Uttarakhand
- D Himachal Pradesh

Answer: B

Question 10

Find arc elasticity of demand, if quantity demanded falls from 1000 to 950 when price of the item is increased from Rs. 240 to Rs. 280?

- A 0.33
- B 0.3
- C -0.3
- D -0.33

Answer: D

Question 11

A price floor is ____.

- A** a maximum legal price
- B** a minimum legal price
- C** the price where demand equals supply
- D** the price where elasticity of demand equals elasticity of supply

Answer: B

Question 12

Concentration of water vapour in troposphere is

- A** 0-4%
- B** 10-14%
- C** 20-24%
- D** 30-34%

Answer: A

Question 13

Harmful bacteria in potable water make the water

- A** unfit to drink
- B** smelly
- C** colored
- D** turbid

Answer: A

Question 14

First country to impose carbon tax is _____.

- A Australia
- B Iceland
- C USA
- D New Zealand

Answer: D

Question 15

Elephanta Caves is located in which city?

- A Nashik
- B Kolhapur
- C Pune
- D Mumbai

Answer: D

Question 16

Spring tides occur when _____.

- A the moon, the sun and the earth are in the same line
- B the sun is closest to earth
- C the moon is farthest from earth
- D the earth is at right angles with the sun and the moon

Answer: A

Question 17

Humayun's Tomb was built by_____.

- A Humayun

B Hamida Banu Begum

C Babur

D Akbar

Answer: B

Question 18

Who built Sabarmati Ashram?

A Guru Ramdas

B Shah Jahan

C Rao Jodhaji

D Mahatma Gandhi

Answer: D

Question 19

Which movie got the Best Film Award in 2016 IIFA Awards?

A Bajirao Mastani

B Piku

C Tanu Weds Manu Returns

D Bajrangi Bhaijaan

Answer: D

Question 20

Why does a fountain pen leak in aeroplane flying at a height?

A Because of reduced viscosity of the ink in the pen

B Because of increased viscosity of the ink in the pen

C Because of higher atmospheric pressure outside the pen

D Because of lower atmospheric pressure outside the pen

Answer: D

Question 21

Instrument for measuring wind velocity is called

- A** Coulombmeter
- B** Anemometer
- C** Cyanometer
- D** Chronometer

Answer: B

Question 22

In the presence of which of the following, does the President takes Oath?

- A** Vice-President
- B** Lok Sabha Speaker
- C** Chief Justice of India
- D** Attorney General

Answer: C

Question 23

Who was the first indian Chief Election Commissioner?

- A** Morarji Desai
- B** Sukumar Sen
- C** Sardar Patel
- D** V.S Ramadevi

Answer: B

Question 24

Phil Mickelson plays which International Sport?

- A Golf
- B Baseball
- C Basketball
- D Boxing

Answer: A

Question 25

Who is the author of the book - "The White Tiger"?

- A Maneesh Tripathi
- B Aravind Adiga
- C Arvind Joshi
- D Vijay Lohkare

Answer: B

Mathematics

Instructions

For the following questions answer them individually

Question 26

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

- A -7
- B 3
- C 4
- D 1

Answer: D

Explanation:

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

$$\Rightarrow 5x - 12 + 3x < 4x - 4$$

$$\Rightarrow 8x - 4x < -4 + 12$$

$$\Rightarrow 4x < 8$$

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

$$\text{Expression 2 : } 4x - 4 < 4x + 2x/3$$

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

$$\Rightarrow x > -6 \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $-6 < x < 2$

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

\Rightarrow Ans - (D)

Question 27

Reflection of the point (-1,4) in the x-axis is

A (1,4)

B (1,-4)

C (-1,4)

D (-1,-4)

Answer: D

Explanation:

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

\Rightarrow Reflection of point (-1,4) = (-1,-4)

\Rightarrow Ans - (D)

Question 28

To travel 660 km, an Express train takes 10 hours more than Rajdhani. If however, the speed of the Express train is doubled, it takes 7 hours less than Rajdhani. The speed of Rajdhani is

A 38.8 km/hr

B 16.2 km/hr

C 50.1 km/hr

D 27.5 km/hr

Answer: D

Explanation:

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

Using, time = distance/speed

$$\text{Acc. to ques, } \Rightarrow \frac{660}{y} - \frac{660}{x} = 10$$

$$\Rightarrow \frac{1}{y} - \frac{1}{x} = \frac{10}{660} = \frac{1}{66} \text{-----(i)}$$

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

$$\Rightarrow \frac{660}{x} - \frac{660}{2y} = 7$$

$$\Rightarrow \frac{1}{x} - \frac{1}{2y} = \frac{7}{660} \text{-----(ii)}$$

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

$$\Rightarrow \frac{1}{y} - \frac{1}{2y} = \frac{1}{66} + \frac{7}{660}$$

$$\Rightarrow \frac{1}{2y} = \frac{17}{660}$$

$$\Rightarrow y = \frac{330}{17} \text{ km/hr}$$

$$\therefore \text{Speed of Rajdhani} = \frac{1}{x} = \frac{17}{330} - \frac{1}{66}$$

$$\Rightarrow \frac{1}{x} = \frac{17-5}{330} = \frac{12}{330} = \frac{2}{55}$$

$$\Rightarrow x = 27.5 \text{ km/hr}$$

\Rightarrow Ans - (D)

Question 29

Simplify $(b^5 x^2 a^3 z^4) * (b^3 x^2 a^4 z^5) / (a^2 b^3 z^2)$

A $b^5 x^4 a^5 z^5$

B $b^5 x^4 a^5 z^7$

C $b^5 x^4 a^4 z^7$

D $b^4 x^4 a^5 z^7$

Answer: B

Explanation:

$$\text{Expression : } (b^5 x^2 a^3 z^4) * (b^3 x^2 a^4 z^5) / (a^2 b^3 z^2)$$

$$= (a)^{3+4} (b)^{5+3} (x)^{2+2} (z)^{4+5} \div a^2 b^3 z^2$$

$$= a^7 b^8 x^4 z^9 \div a^2 b^3 z^2$$

$$= (a)^{7-2} (b)^{8-3} (x)^4 (z)^{9-2}$$

$$= a^5 b^5 x^4 z^7$$

\Rightarrow Ans - (B)

Question 30

For triangle ABC, find equation of median AD if co-ordinates of points A, B and C are (2,-4), (3,0) and (5,-2) respectively?

A $3x - 2y = 14$

B $3x - 2y = 2$

C $3x + 2y = 14$

D $3x + 2y = 2$

Answer: A

Explanation:

Co-ordinates of triangle ABC are A(2,-4), B(3,0) and C(5,-2)

Median AD will bisect BC at D and D will be the mid point of BC.

Thus, coordinates of D are = $(\frac{3+5}{2}, \frac{0-2}{2})$

$$= (\frac{8}{2}, \frac{-2}{2}) = (4, -1)$$

Now, equation of line passing through (x_1, y_1) and (x_2, y_2) is : $(y - y_1) = \frac{y_2 - y_1}{x_2 - x_1}(x - x_1)$

=> Equation of AD where A(2,-4) and D(4,-1) is :

$$\Rightarrow (y + 4) = \frac{(-1+4)}{(4-2)}(x - 2)$$

$$\Rightarrow (y + 4) = \frac{3}{2}(x - 2)$$

$$\Rightarrow 2y + 8 = 3x - 6$$

$$\Rightarrow 3x - 2y = 14$$

=> Ans - (A)

Question 31

If a retailer offers a discount of 28% on the marked price of his goods and thus ends up selling at cost price, what was the % mark up?

A 18.25 percent

B 22 percent

C 38.88 percent

D 28 percent

Answer: C

Explanation:

Let marked price = $Rs.100$

Discount % = 28%

$$\Rightarrow \text{Selling price} = 100 - \left(\frac{28}{100} \times 100\right)$$

$$= 100 - 28 = Rs.72$$

According to ques, \Rightarrow Cost price = Selling price = Rs. 72

$$\therefore \text{Markup \%} = \frac{100-72}{72} \times 100$$

$$= \frac{14 \times 25}{9} = 38.88\%$$

\Rightarrow Ans - (C)

Question 32

What is the value of $\tan 300^\circ$?

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

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

C $-\sqrt{3}$

D $-\frac{\sqrt{3}}{2}$

Answer: C

Explanation:

Expression : $\tan 300^\circ$

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

$$= -\sqrt{3}$$

\Rightarrow Ans - (C)

Question 33

When a number is increased by 38, it becomes 119% of itself. What is the number?

A 200

B 456

C 570

D 342

Answer: A

Explanation:

Let the number be $100x$

$$\text{According to ques, } \Rightarrow 100x + 38 = \frac{119}{100} \times 100x$$

$$\Rightarrow 100x + 38 = 119x$$

$$\Rightarrow 119x - 100x = 38$$

$$\Rightarrow x = \frac{38}{19} = 2$$

$$\therefore \text{Number} = 100 \times 2 = 200$$

\Rightarrow Ans - (A)

Question 34

The difference between simple and compound interests compounded annually on a certain sum of money for 2 years at 8% per annum is Rs 40. What is the sum?

A Rs 12500

B Rs 6250

C Rs 25000

D Rs 18750

Answer: B

Explanation:

Let the given sum = Rs. $100x$

Rate of interest = 8% and time period = 2 years

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

$$= 100x \left[\left(1 + \frac{8}{100} \right)^2 - 1 \right]$$

$$= 100x \left[\left(\frac{108}{100} \right)^2 - 1 \right] = 100x \left(\frac{11664 - 10000}{10000} \right)$$

$$= \frac{1664x}{100}$$

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

$$= \frac{100x \times 8 \times 2}{100} = 16x$$

$$\Rightarrow \text{Difference between simple and compound interests} = \frac{1664x}{100} - 16x = 40$$

$$\Rightarrow \frac{1664x - 1600x}{100} = 40$$

$$\Rightarrow 64x = 40 \times 100$$

$$\Rightarrow x = \frac{4000}{64} = \frac{500}{8} = 62.5$$

$$\therefore \text{Value of given sum} = 100 \times 62.5 = \text{Rs.}6250$$

Question 35

In a Rhombus ABCD, measure of angle CAB is 35° , what is the measure of angle ABC?

A 70°

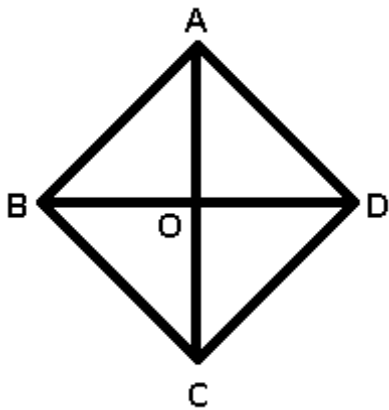
B 40°

C 50°

D 110°

Answer: D

Explanation:



Given : $\angle CAB = 35^\circ$

To find : $\angle ABC$

Solution : Diagonals of a rhombus bisect the angles of the rhombus

$$\Rightarrow \angle BAD = 2 \times \angle CAB$$

$$\Rightarrow \angle BAD = 70^\circ$$

Sum of adjacent angles in a rhombus = 180°

$$\Rightarrow \angle BAD + \angle ABC = 180^\circ$$

$$\Rightarrow \angle ABC = 180^\circ - 70^\circ = 110^\circ$$

\Rightarrow Ans - (D)

Question 36

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

A $\sin A$

B $\operatorname{cosec} A$

C $\sec A$

D $\cos A$

Answer: D

Explanation:

$$\text{Expression : } \frac{\cot A}{\sqrt{(1+\cot^2 A)}} = x$$

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

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

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

$$= \frac{\cos A}{\sin A} \times \sin A = \cos A$$

=> Ans - (D)

Question 37

When a discount of 20% is given on a lunch buffet, the profit is 42%. If the discount is 15%, then the profit is:

A 57 percent

B 50.875 percent

C 63.125 percent

D 44.75 percent

Answer: B

Explanation:

Let marked price of lunch buffet = Rs. 100

When discount of 20% is given, => Selling price of ticket = $\frac{(100-20)}{100} \times 100 = \text{Rs. } 80$

Let cost price = $\text{Rs. } x$

$$\Rightarrow \text{Profit \%} = \frac{80-x}{x} \times 100 = 42$$

$$\Rightarrow \frac{80-x}{x} = \frac{42}{100} = \frac{21}{50}$$

$$\Rightarrow 4000 - 50x = 21x$$

$$\Rightarrow 21x + 50x = 71x = 4000$$

$$\Rightarrow x = \frac{4000}{71} = \text{Rs. } 56.33$$

If discount is 15%, => Selling price = $\frac{(100-15)}{100} \times 100 = \text{Rs. } 85$

$$\Rightarrow \text{Profit \%} = \frac{85-56.33}{56.33} \times 100$$

$$= \frac{2867}{56.33} \approx 50.875\%$$

=> Ans - (B)

Question 38

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

- A cosecA - cotA
- B cosecA + cotA
- C secA - cotA
- D secA + cotA

Answer: A

Explanation:

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

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

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

=> Ans - (A)

Question 39

On dividing a number by 38, we get 70 as quotient and 12 as remainder. What is the number?

- A 2648
- B 2636
- C 2684
- D 2672

Answer: D

Explanation:

Let the number be x

Dividend = Divisor \times Quotient + Remainder

$$\Rightarrow x = (38 \times 70) + 12$$

$$= 2660 + 12 = 2672$$

=> Ans - (D)

Question 40

By increasing the price of entry ticket to a fair in the ratio 17:19, the number of visitors to the fair has decreased in the ratio 11:10. In what ratio has the total collection increased or decreased?

A decreased in the ratio 190:187

B increased in the ratio 187:190

C increased in the ratio 170:209

D decreased in the ratio 209:170

Answer: B

Explanation:

Let cost of original ticket = Rs 17 and number of visitors = 110

=> Original revenue = $17 \times 110 = \text{Rs } 1870$

After increase in cost of ticket

New cost of ticket = Rs 19 and number of visitors = 100

=> New Revenue = $19 \times 100 = \text{Rs } 1900$

Since, new revenue is greater than original revenue, thus total collection has increased.

\therefore Increase of total collection ratio = $\frac{1870}{1900} = 187 : 190$

=> Ans - (B)

Question 41

In a cyclic quadrilateral

A Opposite sides are parallel

B Diagonals are bisectors of each other

C Opposite angles are supplementary

D Adjacent angles are supplementary

Answer: C

Explanation:

In a cyclic quadrilateral ABCD, the sum of $\angle A + \angle C = \angle B + \angle D = 180$.

Thus, opposite angles are supplementary.

=> Ans - (C)

Question 42

If $a + b = -8$ and $a^2 + b^2 = 34$, then value of ab is

A 30

B 64

C 98

D 15

Answer: D

Explanation:

Given : $(a + b) = -8$ and $a^2 + b^2 = 34$

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

$$\Rightarrow (-8)^2 = 34 + (2 \times ab)$$

$$\Rightarrow 2ab = 64 - 34 = 30$$

$$\Rightarrow ab = \frac{30}{2} = 15$$

\Rightarrow Ans - (D)

Question 43

The average of 19 consecutive even integers is 50. The highest of these integers is

A 88

B 68

C 126

D 100

Answer: B

Explanation:

The 19 consecutive even integers will form an arithmetic progression with common difference, $d = 2$

Let the first term be a

$$\text{Average of 19 integers} = 50, \Rightarrow \text{Sum} = 19 \times 50 = 950$$

$$\Rightarrow \text{Sum of these integers} = \frac{n}{2}[2a + (n - 1)d] = 950$$

$$\Rightarrow \frac{19}{2}[2a + (18 \times 2)] = 950$$

$$\Rightarrow 19(a + 18) = 950$$

$$\Rightarrow (a + 18) = \frac{950}{19} = 50$$

$$\Rightarrow a = 50 - 18 = 32$$

\therefore The highest integer or the 19th term, $A_{19} = a + (19 - 1)d$

$$= 32 + (18 \times 2) = 32 + 36 = 68$$

\Rightarrow Ans - (B)

Question 44

The first and last terms of an arithmetic progression are 25 and -52. What is the sum of the series if it has 12 terms?

A -162

B -110

C 162

D 110

Answer: A

Explanation:

In an arithmetic progression with first term, $a = 25$, last term, $l = -52$

Number of terms = $n = 12$

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

$$= \frac{12}{2}(25 - 52)$$

$$= 6 \times (-27) = -162$$

\Rightarrow Ans - (A)

Question 45

A wooden bowl is in shape of a hollow hemisphere of internal radius 9 cm and thickness 1 cm. Find the total surface area of the bowl?

A 1376.58 sq cms

B 2064.87 sq cms

C 344.15 sq cms

D 1197.42 sq cms

Answer: D

Explanation:

The hemispherical bowl has three surfaces to calculate : the interior hemisphere ($r_{int} = 9$) cm , the exterior hemisphere ($r_{ext} = 9 + 1 = 10$) cm and the annular(ring shaped) top edge (r_{ext}, r_{int})

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

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

$$= [2\pi(9)^2] + [2\pi(10)^2] + [\pi(10^2 - 9^2)]$$

$$= \pi[(2 \times 81) + (2 \times 100) + (100 - 81)]$$

$$= \pi(162 + 200 + 19) = 381\pi$$

$$= 381 \times \frac{22}{7} = 1197.42 \text{ cm}^2$$

=> Ans - (D)

Question 46

Pankaj has done 1/2 of a job in 12 days, Sainath completes the rest of the job in 6 days. In how many days can they together do the job?

A 4 days

B 12 days

C 8 days

D 16 days

Answer: C

Explanation:

Let total work to be done = 24 units

Pankaj has done 1/2 of a job i.e. $\frac{24}{2} = 12$ units in 12 days

=> Pankaj's efficiency = $\frac{12}{12} = 1$ unit/day

Work left = 24 - 12 = 12 units which is done by Sainath in 6 days

=> Sainath's efficiency = $\frac{12}{6} = 2$ units/day

Pankaj and Sainath 1 day's work = 1 + 2 = 3 units/day

∴ Time taken by them together to complete the work = $\frac{24}{3} = 8$ days

=> Ans - (C)

Question 47

Refer the below data table and answer the following Question.

	Boys	Girls
Medical	25	40
Engineering	65	25

What percent students who chose Engineering are girls?

- A 16.13
- B 38.46
- C 43.26
- D 27.78

Answer: D

Explanation:

Number of girls who chose engineering = 25

Total number of engineers = 65 + 25 = 90

=> Percent of the girls who choose engineering = $\frac{25}{90} \times 100$

= $\frac{250}{9} = 27.78\%$

=> Ans - (D)

Question 48

Refer the below data table and answer the following Question.

	Cumulative Production
January	360
February	920
March	1520
April	1970
May	2620
June	3000

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

- A 1050
- B 1030
- C 1100
- D 4590

Answer: C

Explanation:

Number of cars produced in :

January = 360

February = 920 - 360 = 560

$$\text{March} = 1520 - 920 = 600$$

$$\text{April} = 1970 - 1520 = 450$$

$$\text{May} = 2620 - 1970 = 650$$

$$\text{June} = 3000 - 2620 = 380$$

=> Number of cars that were manufactured in the month of the April and may = $450 + 650 = 1100$

=> Ans - (C)

Question 49

Refer the below data table and answer the following Question.

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

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

A 1570 calories

B 1470 calories

C 1420 calories

D 1520 calories

Answer: D

Explanation:

Total distance jogged in entire week

$$= 3 + 3 + 2 + 2 + 3.5 + 2 + 3.5 = 19 \text{ km}$$

Calories burned after jogging 5 km = 400 calories

$$\Rightarrow \text{Calories burned after jogging 19 km} = \frac{400}{5} \times 19$$

$$= 80 \times 19 = 1520 \text{ calories}$$

=> Ans - (D)

Question 50

Refer the below data table and answer the following Question.

Items	Yearly Expense in Rs lakhs
Raw Materials	4
Labour	3
Rent	4
Interest	6
Taxes	1

Raw Materials and Interest are what percent of total expenses?

- A 48.31 percent
- B 41.06 percent
- C 62.81 percent
- D 55.56 percent

Answer: D

Explanation:

Yearly expense in Raw material and interest (in lakhs) = 4 + 6 = 10

Total expenses (in lakhs) = 4 + 3 + 4 + 6 + 1 = 18

$$\Rightarrow \text{Required \%} = \frac{10}{18} \times 100$$

$$= \frac{500}{9} \approx 55.56\%$$

\Rightarrow Ans - (D)

Reasoning

Instructions

For the following questions answer them individually

Question 51

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

Antique : Old :: Weak : ?

- A Strong
- B Fragile
- C Convincing

D Powerful

Answer: B

Explanation:

Antique and old are synonyms, similarly synonym of weak is fragile meaning easily broken.

=> Ans - (B)

Question 52

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

XY : AB :: LM : ?

A OP

B PO

C RS

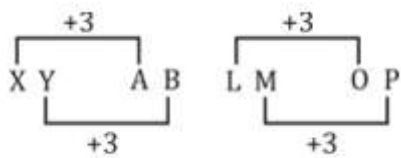
D TU

Answer: A

Explanation:

Expression = XY : AB :: LM : ?

The pattern followed is :



Thus, LM : OP

=> Ans - (A)

Question 53

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

CE : GK :: MQ : ?

A PQ

B QW

C SV

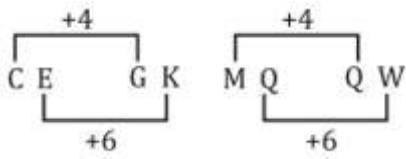
D TP

Answer: B

Explanation:

Expression = CE : GK :: MQ : ?

The pattern followed is :



Thus, MQ : QW

=> Ans - (B)

Question 54

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

36 : 12 :: 72 : ?

A 20

B 24

C 17

D 16

Answer: B

Explanation:

Expression = 36 : 12 :: 72 : ?

The pattern followed is = $x : \frac{x}{3}$

Eg :- $36 : \frac{36}{3} = 36 : 12$

Similarly, $\frac{72}{3} = 24$

=> Ans - (B)

Question 55

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

A Apple

B Banana

C Tomato

D Cauliflower

Answer: D

Explanation:

Except Cauliflower other three are fruits, hence it is the odd one out.

=> Ans - (D)

Question 56

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

A LMO

B PQS

C XYB

D DEG

Answer: C

Explanation:

(A) : L (+1 letter) = M (+2 letters) = O

(B) : P (+1 letter) = Q (+2 letters) = S

(C) : X (+1 letter) = Y (+3 letters) = B

(D) : D (+1 letter) = E (+2 letters) = G

=> Ans - (C)

Question 57

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

A 256

B 289

C 343

D 144

Answer: C

Explanation:

$$256 = (16)^2$$

$$289 = (17)^2$$

$$343 = (7)^3$$

$$144 = (12)^2$$

=> Ans - (C)

Question 58

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

A 373

B 265

C 490

D 672

Answer: D

Explanation:

The sum of digits of first three numbers is 13, but $6 + 7 + 2 = 15$, hence 672 is the odd one out.

=> Ans - (D)

Question 59

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

Hydrogen, Helium, Lithium, ?

A Beryllium

B Boron

C Carbon

D Nitrogen

Answer: A

Explanation:

The series is given according to the periodic table of elements.

= Hydrogen -> Helium -> Lithium -> Beryllium

=> Ans - (A)

Question 60

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

FIL, LOR, RUX, ?

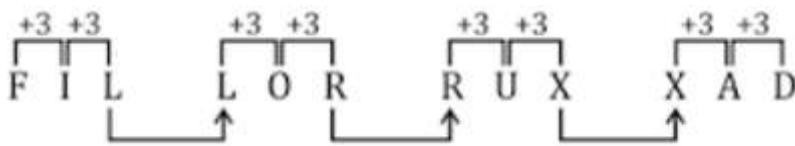
- A XBE
- B XAD
- C YAD
- D XYD

Answer: B

Explanation:

Expression : FIL, LOR, RUX, ?

The pattern followed is :



Thus, missing term = **XAD**

=> Ans - (B)

Question 61

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

FU, HS, JQ, ?

- A LO
- B MN
- C LM
- D LN

Answer: A

Explanation:

Expression : FU, HS, JQ, ?

The pattern followed for each letter in the terms is :

1st letter : F (+2 letters) = H (+2 letters) = J (+2 letters) = L

2nd letter : U (-2 letters) = S (-2 letters) = Q (-2 letters) = O

Thus, missing term = **LO**

=> Ans - (A)

Question 62

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

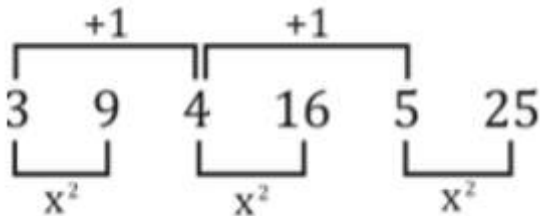
3, 9, 4, 16, 5, ?

- A 6
- B 25
- C 20
- D 18

Answer: B

Explanation:

The pattern followed is :



Thus, missing number = 25

=> Ans - (B)

Question 63

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

Statements:

- (I) Some men are educated.
- (II) Educated persons prefer small families.

Conclusion:

- (I) All families are educated.
- (II) Some men prefer small families.

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

Answer: B

Question 64

A is taller than B, who is shorter than C, but taller than D. Who is the shortest?

A B

B C

C D

D A

Answer: C

Explanation:

A is taller than B, who is shorter than C, but taller than D.

From above statements, we get : **A, C > B > D**

∴ D is the shortest.

=> Ans - (C)

Question 65

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

i. Recognize

ii. Receptive

iii. Record

iv. Recur

A ii, i, iii, iv

B iv, iii, ii, i

C ii, i, iv, iii

D i, ii, iii, iv

Answer: A

Explanation:

As per the order of dictionary :

= Receptive -> Recognize -> Record -> Recur

≡ ii, i, iii, iv

=> Ans - (A)

Question 66

In a certain language "BROTHER" is written as "CSPUIFS". How is "SISTER" written in that code language?

- A TJTFUS
- B TJTUFS
- C SFUTJT
- D TJTSFU

Answer: B

Explanation:

"BROTHER" is written as "CSPUIFS"

The pattern followed is :

B	R	O	T	H	E	R
+1↓	+1↓	+1↓	+1↓	+1↓	+1↓	+1↓
C	S	P	U	I	F	S

Similarly, for SISTER :

S	I	S	T	E	R
+1↓	+1↓	+1↓	+1↓	+1↓	+1↓
T	J	T	U	F	S

=> Ans - (B)

Question 67

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

15	28	7
23	?	17
20	16	14

- A 17
- B 8
- C 26
- D 10

Answer: D

Explanation:

The sum of each row is same.

$$\text{Eg :- } 15 + 28 + 7 = 50$$

$$\text{and } 20 + 16 + 14 = 50$$

$$\text{Similarly, } 23 + 17 + x = 50$$

$$\Rightarrow x = 50 - 40 = 10$$

\Rightarrow Ans - (D)

Question 68

If "S" denotes "multiplied by", "V" denotes "subtracted from", "M" denotes "added to" and "L" denotes "divided by", then $11 \text{ V } 9 \text{ M } 88 \text{ L } 11 \text{ S } 9 = ?$

A 66

B -70

C 74

D 72

Answer: C

Explanation:

Expression : $11 \text{ V } 9 \text{ M } 88 \text{ L } 11 \text{ S } 9 = ?$

$$\equiv 11 - 9 + 88 \div 11 \times 9$$

$$= 2 + (8 \times 9)$$

$$= 2 + 72 = 74$$

\Rightarrow Ans - (C)

Question 69

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

b_d_ed_b_c_e

A cedbc

B cecbd

C ceabc

D cecdb

Answer: B

Explanation:

The pattern followed is that in groups of 4, the term 'bcde' is alternatively repeated with its reverse.

= bcde edcb bcde

=> Ans - (B)

Question 70

A is to the south-east of B. In which direction is B with respect to A?

A South-west

B North-west

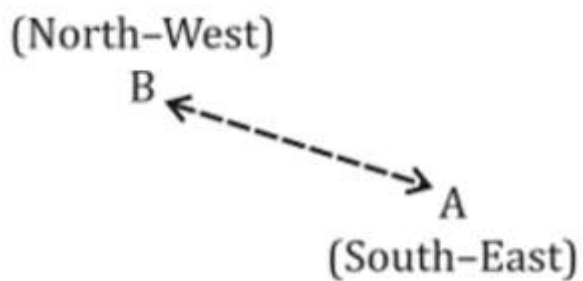
C North-east

D South-east

Answer: B

Explanation:

A is to the south-east of B



Thus, B is to the North-west of A.

=> Ans - (B)

Question 71

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 'CLASS'.

Matrix - I

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

Matrix - II

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

- A 32, 67, 12, 87, 98
- B 43, 78, 23, 98, 95
- C 21, 34, 23, 98, 87
- D 32, 67, 12, 65, 42

Answer: A

Explanation:

(A) : 32, 67, 12, 87, 98 = **CLASS**

(B) : 43, 78, 23, 98, 95 = CLASK

(C) : 21, 34, 23, 98, 87 = CAASS

(D) : 32, 67, 12, 65, 42 = CLASH

=> Ans - (A)

Question 72

The only brother of Ankit is the brother-in-law of Shweta. How Shweta is related to Ankit?

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

Answer: A

Explanation:

The only brother of Ankit is the brother-in-law of Shweta.

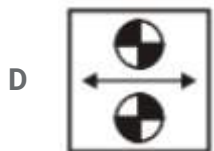
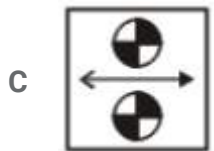
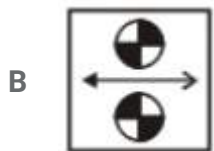
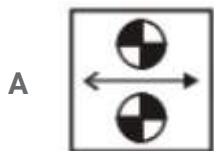
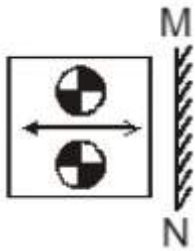
=> Ankit and Shweta are married, and Ankit's only brother is the brother-in-law of Shweta.

Thus, Shweta is the wife of Ankit's brother.

=> Ans - (A)

Question 73

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



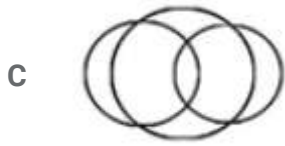
Answer: D

Question 74

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

Plants, Humans, Respiration

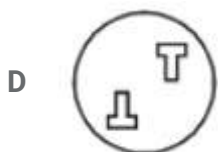
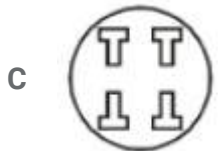
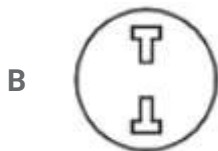
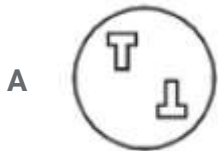




Answer: B

Question 75

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



Answer: C

English

Instructions

For the following questions answer them individually

Question 76

Improve the bracketed part of the sentence.

(As soon as I saw) the ferocious dog than I ran away.

- A No sooner than I saw
- B No sooner has I seen
- C No sooner did I see
- D no improvement

Answer: C

Question 77

Rearrange the parts of the sentence in correct order.

It is a good sign

P-that the ratio remains the same despite

Q-the revenue base coming down because

R-of increased devolution to States

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

Answer: D

Question 78

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'.

We have to accept(A)/that driving vehicles(B)require expertise.(C)/No error(D)

- A A
- B B

C C

D D

Answer: C

Question 79

Select the antonym of to brood

A to repine

B to ignore

C to fret

D to mope

Answer: B

Question 80

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 cricket ball struck me on the head.

A Struck me on the head the cricket ball .

B I was struck on the head by the cricket ball.

C I had been struck on the head by the cricket ball.

D I am striked on the head by the cricket ball.

Answer: B

Question 81

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

Through thick and thin

A To be together under all circumstances, no matter how difficult

B None of the days are alike. Some are good and some are bad

C To pass through various types of obstacles

D An obese person suddenly losing weight

Answer: A

Question 82

Rearrange the parts of the sentence in correct order.

India is extremely short

P-of water, and there will be even less

Q-is taken out

R-of it as groundwater

A RPQ

B QRP

C PRQ

D QPR

Answer: C

Question 83

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

Thumb one's nose

A an ill-mannered person

B to show affection

C to scold a naughty person

D to express scorn

Answer: D

Question 84

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.

'Have you come from Japan?' said the shopkeeper to the tourist.

A The shopkeeper asked the tourist whether she had come from Japan.

- B** The shopkeeper asked the tourist that if she had come from Japan.
- C** The shopkeeper asked the tourist that whether she had come from Japan.
- D** The shopkeeper asked the tourist if she came from Japan.

Answer: D

Question 85

Select the synonym of crown

- A** frown
- B** apex
- C** nadir
- D** base

Answer: B

Question 86

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

The unruly behaviour of the parliamentarians _____ the speaker.

- A** incensed
- B** estranged
- C** enflamed
- D** disparaged

Answer: A

Question 87

Improve the bracketed part of the sentence.

The hapless kid (cut a sorry figure) in his first performance on the stage.

- A** made a sorry figure
- B** made a sad figure

- C cut a sorry face
- D no improvement

Answer: D

Question 88

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

To better the public transport system, the municipality _____ the scheme of securing dedicated lanes for buses.

- A marketed
- B launched
- C floated
- D enhanced

Answer: B

Question 89

Select the word with the correct spelling.

- A blottched
- B essences
- C sylabus
- D semmantic

Answer: B

Question 90

Select the synonym of preacher

- A atheist
- B agnostic
- C evangelist

D pagan

Answer: C

Question 91

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

the customary code of polite behaviour in society or among members of a particular profession or group

A etiquette

B frizette

C epaulette

D fossette

Answer: A

Question 92

Select the word with the correct spelling.

A depicted

B brisbaane

C fiddling

D ponderred

Answer: C

Question 93

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 he studied(A)/very hard, he(B)/could not pass the exam.(C)/No error(D)

A A

B B

C C

D D

Answer: D

Question 94

Select the antonym of veracity

A deceit

B condor

C probity

D rectitude

Answer: A

Question 95

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

the way in which a substance holds together; thickness or viscosity

A corpulency

B consistency

C exigency

D exultancy

Answer: B

Instructions

correct answer for the given blank out of the four alternatives.

The main failings were of conception and a political willingness to settle ____ (1) ____ easy options. ____ (2) ____ the expansive declarations of the need "to maintain effective security of all nuclear materials, ____ (3) ____ includes nuclear materials used in nuclear weapons", the summits narrowed their ____ (4) ____ to civilian holdings ____ (5) ____ non-nuclear weapon states.

Question 96

(1)

A to

B of

C from

D for

Answer: D

Question 97

(2)

A Inspite

B Since

C Despite

D Despite of

Answer: C

Question 98

(3)

A which

B that

C those

D who

Answer: A

Question 99

(4)

A view

B focus

C attention

D vision

Answer: B

Question 100

(5)

A into

B for

C in

D about

Answer: C

SSC CHSL 17 Jan 2017 Evening Shift

English

Instructions

For the following questions answer them individually

Question 1

Rearrange the parts of the sentence in correct order.

Technology for

P-tracking droughts has

Q-grown in leaps and bounds

R-forecasting and

A RQP

B PQR

C RPQ

D QRP

Answer: C

Question 2

Improve the bracketed part of the sentence.

If you are living in the crowded part of the city then you should be ready to (bear) the noise.

A bear off

B bear away

C bear with

D no improvement

Answer: C

Question 3

Select the word with the correct spelling.

A extoled

B couscous

C infernall

D coneriti

Answer: B

Question 4

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

based on random choice or personal whim

A auxiliary

B arbitrary

C allegory

D ambulatory

Answer: B

Question 5

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

Wild goose chase

A A hopeless search for something unattainable

B An adventurous trip full of surprises

C To waste a lot of time and effort for small returns

D To have fun doing a certain task

Answer: A

Question 6

Rearrange the parts of the sentence in correct order.

The NSG

P- of nuclear trade, spelt out in its guidelines and trigger-lists

Q- covering every aspect

R- has already made its rules,

A QRP

B QPR

C PRQ

D RQP

Answer: D

Question 7

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'.

Today the cost of living(A)/is so high that many people(B)/find it difficult to make ends meet.(C)/No error(D)

A A

B B

C C

D D

Answer: D

Question 8

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

You bet

A Contradicting someone

B Certainly

C Gamble

D Letting others lead

Answer: B

Question 9

In the following question, a sentence has been given in Active/Passive voice. Out of four alternatives suggested, select the one, which best expresses the same sentence in Passive/Active voice.

The workers expected to finish the job.

A The job was expecting to being finished by the workers.

B It was expected that the workers would be finishing the job.

C The job was expected to been finished by the workers.

D It was expected by the workers that they would finish the job.

Answer: D

Question 10

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'.

Vipul has been(A)/suffering from fever(B)/since seven days.(C)/No error(D)

A A

B B

C C

D D

Answer: C

Question 11

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

to slap with one's hand or a flat object

A to spank

B to clobber

C to whip

D to flog

Answer: A

Question 12

Select the synonym of deployment

A bane

B banishment

C stationing

D strategise

Answer: C

Question 13

Select the antonym of: to sue

A to absolve

B to litigate

C to indict

D to solicit

Answer: A

Question 14

Select the antonym of facade

A frontage

B semblance

C veneer

D reality

Answer: D

Question 15

Improve the bracketed part of the sentence.

If you come across new words, you should look (them up) in the dictionary.

A for them

B at them

C them down

D no improvement

Answer: D

Question 16

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.

Crimes against women areof the deep rooted patriarchal systems of our society.

- A indications
- B manifestations
- C demonstrations
- D explanations

Answer: B

Question 17

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.

Three Indian ad agencies haveawards at the International competition.

- A obtained
- B attained
- C bagged
- D procured

Answer: C

Question 18

Select the word with the correct spelling.

- A deseased
- B spedier
- C schemata
- D unioniest

Answer: C

Question 19

In the following question, a sentence has been given in Direct/Indirect speech. Out of the four alternatives suggested, select the one, which best express the same sentence in Indirect/Direct speech.

Sara answered, "The photographs are under the drawer".

- A Sarah answered the photographs are under the drawer.
- B Sarah answered that, that the photographs are under the drawer.
- C Sarah answered the photographs were under the drawer.
- D Sarah answered that the photographs were under the drawer.

Answer: D

Question 20

Select the synonym of banquet

- A fast
- B feast
- C voracity
- D gluttony

Answer: B

Instructions

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

To begin.....(1)....., let us asksuch an appellation, assuming it has only positive.....(2)....., was ever deserved in a city like Bengaluru. At the risk.....(3)..... earning the well-shaped wrath of fellow Bengalureans, let me explain that.....(4).....for a "peacefull" past apart, it would be difficult to assert that "Asia's Silicon Valley" had even a history of toleration of difference.

To begin(5).....,

Question 21

(1)

- A for
- B so

C with

D thus

Answer: C

Question 22

(2)

A whether

B if

C even if

D in case

Answer: A

Question 23

(3)

A nuances

B hints

C suggestions

D connotations

Answer: D

Question 24

(4)

A for

B of

C about

D over

Answer: B

Question 25

(5)

- A nostalgia
- B remorse
- C sentimentality
- D memories

Answer: A

Reasoning

Instructions

For the following questions answer them individually

Question 26

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

Railway Station : Station Master :: School : ?

- A Chef
- B Doctor
- C Lieutenant
- D Principal

Answer: D

Explanation:

First is institution and seconds is its highest authority, i.e. Station master is the head of a railway station, similarly *Principal* is the head of a school.

=> Ans - (D)

Question 27

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

GROUPS : ITQWRU :: SECOND : ?

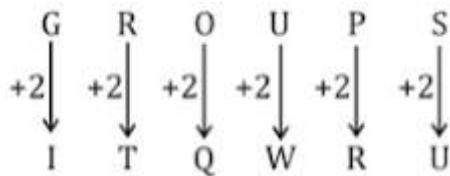
- A UGFQPE
- B UGEQPF
- C UEGQPF
- D UGEQFP

Answer: B

Explanation:

Expression = GROUPS : ITQWRU :: SECOND : ?

The pattern followed is :



Similarly, SECOND : **UGEQPF**

=> Ans - (B)

Question 28

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

LETTER : MFUUFS :: AHEAD : ?

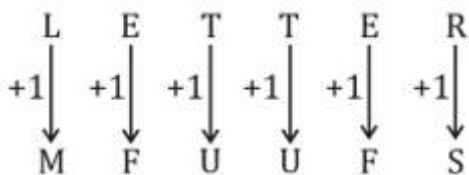
- A BIFBE
- B BIBFE
- C BFIBE
- D BEFBE

Answer: A

Explanation:

Expression = LETTER : MFUUFS :: AHEAD : ?

The pattern followed is :



Similarly, AHEAD : **BIFBE**

=> Ans - (A)

Question 29

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

12 : 48 :: 104 : ?

A 415

B 420

C 480

D 416

Answer: D

Explanation:

Expression = 12 : 48 :: 104 : ?

The pattern followed is = $x : 4x$

Eg :- $12 : 4 \times 12 = 12 : 48$

Similarly, $4 \times 104 = 416$

=> Ans - (D)

Question 30

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

A Duckworth-Lewis method

B Googly

C Dribbling

D Leg before wicket

Answer: C

Explanation:

Except Dribbling other three are related to cricket, hence it is the odd one out.

=> Ans - (C)

Question 31

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

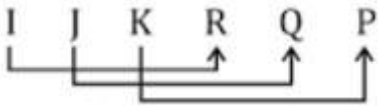
A IJKRQP

- B FGHUTS
- C BCDWXY
- D KLMPON

Answer: C

Explanation:

Last three letters are corresponding opposite of first three letters.



Similar pattern is observed in FGHUTS and KLMPON, hence BCDWXY is the odd one out.

=> Ans - (C)

Question 32

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

- A 64122
- B 56211
- C 54304
- D 54321

Answer: C

Explanation:

The sum of digits of the numbers is 15, but $5 + 4 + 3 + 0 + 4 = 16$, hence 54304 is the odd one out.

=> Ans - (C)

Question 33

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

- A 3425
- B 4541
- C 5661
- D 6783

Answer: D

Explanation:

The sum of squares of first two digits is equal to the last two digits.

$$3^2 + 4^2 = 9 + 16 = 25$$

$$4^2 + 5^2 = 16 + 25 = 41$$

$$5^2 + 6^2 = 25 + 36 = 61$$

$$6^2 + 7^2 = 36 + 49 = 85 \neq 83$$

=> Ans - (D)

Question 34

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

Chhattisgarh, Uttarakhand, Jharkhand, ?

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

Answer: D

Explanation:

Newly formed states in increasing order.

= Chhattisgarh -> Uttarakhand -> Jharkhand -> Telangana

=> Ans - (D)

Question 35

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

FI, KM, PQ, ?

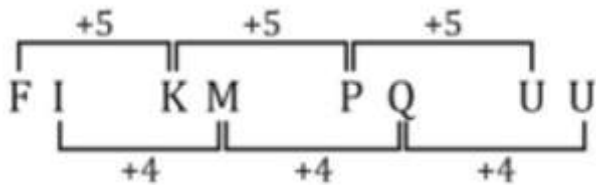
- A MO
- B ZA
- C TO
- D UU

Answer: D

Explanation:

Expression : FI, KM, PQ, ?

The pattern followed is :



Thus, missing term = **UU**

=> Ans - (D)

Question 36

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

BC, JK, RS, ?

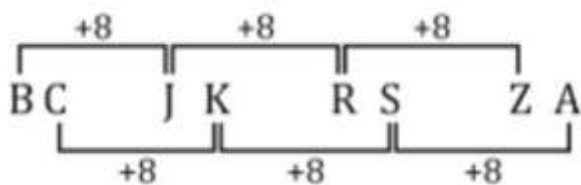
- A YA
- B ZA
- C BC
- D TU

Answer: B

Explanation:

Expression : BC, JK, RS, ?

The pattern followed is :



Thus, missing term = **ZA**

=> Ans - (B)

Question 37

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

Statements:

- (I) All paper are files.
- (II) Some files are pens.

Conclusion:

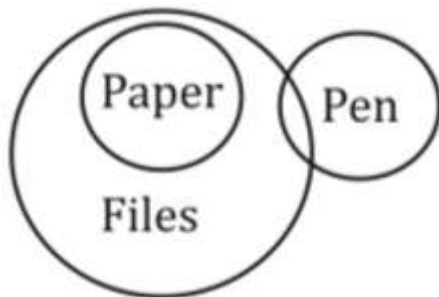
- (I) No paper is a pen.
- (II) Some papers are pens.

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

Answer: C

Explanation:

The venn diagram for above statements is :



Conclusion:

- (I) No paper is a pen = may or may not be true
- (II) Some papers are pens = may or may not be true

Thus, neither I nor II follows

=> Ans - (C)

Question 38

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

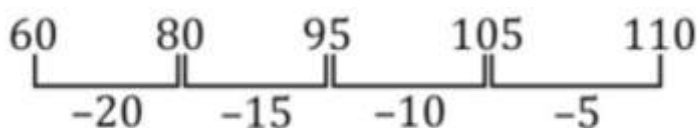
60, 80, 95, 105, ?

- A 190
- B 110
- C 150
- D 250

Answer: B

Explanation:

Multiples of 5 are added in decreasing order.



Thus, missing number = 110

=> Ans - (B)

Question 39

The birth rate in India, Nepal, Sri Lanka, Bangladesh and Pakistan was calculated. The birth rate in Nepal is the lowest, while the birth rate in Pakistan is higher than that in Sri Lanka, and lower than that in India. The birth rate in Bangladesh is higher than that in Nepal, and lower than that in Sri Lanka. Which country has the highest birth rate?

- A Bangladesh
- B Pakistan
- C India
- D Sri Lanka

Answer: C

Explanation:

The birth rate in Nepal is the lowest, while the birth rate in Pakistan is higher than that in Sri Lanka, and lower than that in India

=> India > Pakistan > Sri Lanka

The birth rate in Bangladesh is higher than that in Nepal, and lower than that in Sri Lanka

=> Sri Lanka > Bangladesh > Nepal

Combining above statements, we get : **India > Pakistan > Sri Lanka > Bangladesh > Nepal**

∴ India has the highest birth rate.

=> Ans - (C)

Question 40

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

- i. Regular
- ii. Reinforcement
- iii. Rainbow
- iv. Remedy

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

Answer: C

Explanation:

As per the order of dictionary :

= Rainbow -> Regular -> Reinforcement -> Remedy

≡ iii, i, ii, iv

=> Ans - (C)

Question 41

In a certain code language, "COPIOUS" is written as "2345389" and "GENEROUS" is written as "16760389". How is "PIGEON" written in that code language?

A 451763

B 451673

C 451637

D 452637

Answer: C

Explanation:

The codes for each letter is given :

P -> 4

I -> 5

G -> 1

E -> 6

O -> 3

N -> 7

Thus, PIGEON : **451637**

=> Ans - (C)

Question 42

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

14	16	12
4	5	6
784	1280	?

A 512

B 968

C 864

D 432

Answer: C

Explanation:

In each column the number at the end is obtained by multiplying the square of the first number to the second number.

$$\text{Eg :- } (14)^2 \times 4 = 784$$

$$(16)^2 \times 5 = 1280$$

$$\text{Similarly, } (12)^2 \times 6 = 864$$

=> Ans - (C)

Question 43

If "#" means "subtraction", "&" means "division", "@" means "addition" and "%" means "multiplication", then $132 \& 3 \# 10 @ 20 \% 2 = ?$

A 91

B 74

C 69

D 76

Answer: B

Explanation:

Expression : $132 \& 3 \# 10 @ 20 \% 2 = ?$

$$\equiv 132 \div 3 - 10 + 20 \times 2$$

$$= \left(\frac{132}{3}\right) + (-10) + (20 \times 2)$$

$$= 44 - 10 + 40 = 74$$

=> Ans - (B)

Question 44

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

TER_TE_S_ER_

A TERT

B STTT

C STRS

D SRTS

Answer: D

Explanation:

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

= TERS TERS TERS

=> Ans - (D)

Question 45

A boy leaves his school and travels 8 km towards the east. He takes a left turn and travels 6 km in that direction, and then turns towards the east and travels another 5 km. Finally, he turns right and travels 10 km. In which direction is he now from his school?

A South-East

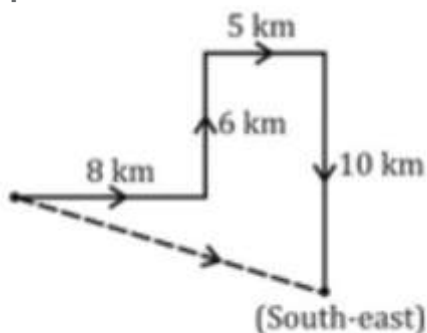
B West

C East

D North-East

Answer: A

Explanation:



The boy initially travels 8 km towards the east. Then, he takes a left turn and travels 6 km northwards, and then turns towards the east and travels another 5 km. Finally, he turns right and travels towards south for 10 km.

Thus, he is south-east of his school.

=> Ans - (A)

Question 46

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix I are numbered from 0 to 4 and that of Matrix II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example, 'F' can be represented by 42, 13 etc. and 'R' can be represented by 76, 58 etc. Similarly, you have to identify the set for the word "GOAL".

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

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

- A 02, 10, 88, 86
- B 56, 88, 14, 41
- C 23, 65, 75, 40
- D 31, 04, 00, 44

Answer: B

Explanation:

- (A) : 02, 10, 88, 86 = GAOL
- (B) : 56, 88, 14, 41 = **GOAL**
- (C) : 23, 65, 75, 40 = GOAO
- (D) : 31, 04, 00, 44 = GOGL

=> Ans - (B)

Question 47

Introducing a girl, Ankit says, "She is the sister of the son of my mother's sister". How is the girl related to Ankit?

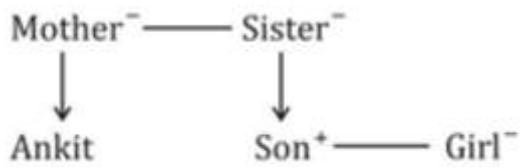
- A Niece
- B Daughter
- C Sister
- D Cousin

Answer: D

Explanation:

Son of Ankit's mother's sister = Ankit's cousin

Now, the girl is the sister of Ankit's cousin



Thus, the girl is also Ankit's cousin.

=> Ans - (D)

Question 48

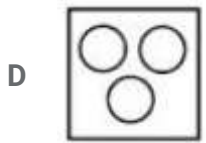
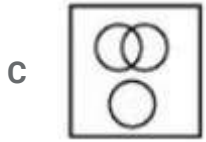
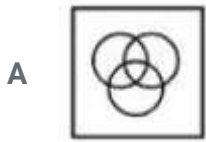
If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure ?



Answer: B

Question 49

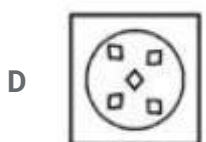
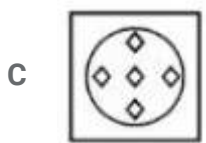
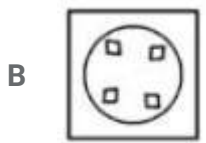
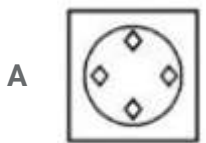
Identify the diagram that best represents the relationship among the given classes. Human, Men, Brothers



Answer: B

Question 50

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



Answer: B

General Awareness

Instructions

For the following questions answer them individually

Question 51

From which monument, Gautama Buddha propagated his divine knowledge of Buddhism to the world?

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

Answer: B

Question 52

Which is the second highest civilian award given in India?

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

Answer: B

Question 53

Which drug is used as an Anti-Inflammatory?

- A Metformin
- B Diazepam
- C Latanoprost

D Prednisone

Answer: D

Question 54

Musa paradisiaca is the scientific name of which plant?

A mango

B wheat

C Corn

D banana

Answer: D

Question 55

Prawns belong to which family?

A Crustaceans

B Fish

C Amphibians

D Reptiles

Answer: A

Question 56

Adding which substance gives blue colour to glass?

A Manganese oxide

B Cobalt oxide

C Chromium oxide

D Iron oxide

Answer: B

Question 57

The (O-H) bond in CH_3OH is

- A polar covalent
- B ionic
- C non polar covalent
- D cationic

Answer: A

Question 58

What is the base of the Octal Numeral System?

- A 8
- B 16
- C 32
- D 64

Answer: A

Question 59

Bengali is the official language of

- A Uttarakhand
- B Tripura
- C Kerala
- D Chhattisgarh

Answer: B

Question 60

If price of an article decreases from Rs 40 to Rs 30, quantity demanded increases from Q1 units to 7500 units. If point elasticity of demand is -1 find Q1?

- A 9000 units
- B 4500 units
- C 10500 units
- D 6000 units

Answer: D

Question 61

Micro economics deals with

- A the circular flow of income
- B the decision making of a single economic variable like demand
- C understanding unemployment
- D economic growth

Answer: B

Question 62

Name the drug that is yielded from Cinchona tree and is used to cure malaria.

- A Camptotheca
- B Acuminata
- C Quinine
- D Cinchona

Answer: C

Question 63

When did the US drop the atomic bomb on Japanese city Hiroshima?

- A 6th August 1945
- B 18th July 1922
- C 26th June 1947

D 11th May 1931

Answer: A

Question 64

The Great Smog of 1952 was a severe air-pollution event which affected

A Paris

B London

C New York

D Delhi

Answer: B

Question 65

1-degree of latitude is equal to

A 11 Km

B 211 Km

C 111 Km

D 311 Km

Answer: C

Question 66

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

A Kanpur

B Srinagar

C Dibrugarh

D Lucknow

Answer: C

Question 67

Adolf Hitler committed suicide in

- A 1915
- B 1925
- C 1935
- D 1945

Answer: D

Question 68

Humayun (1530-1540 AD) was the ruler of which dynasty?

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

Answer: B

Question 69

Blood Circulation was discovered by?

- A Mary Anderson
- B Virginia Apgar
- C William Harvey
- D Robert Feulgen

Answer: C

Question 70

What are the two kinds of Rotatory motion?

- A Spin and Vibrational motion
- B Spin and Orbital motion
- C Spin and Translatory motion
- D Spin and Projectile motion

Answer: B

Question 71

.....is the perpendicular distance between point of application of force and axis of rotation.

- A Moment arm
- B Moment of Inertia
- C Altitude
- D Base

Answer: A

Question 72

As per John Locke, an English philosopher and physician, which is not a Natural Right?

- A Liberty
- B Equality
- C Property
- D Right to Vote

Answer: D

Question 73

How many seats are reserved for representatives of Scheduled Castes and Scheduled Tribes in Lok Sabha?

- A 39
- B 85
- C 109

D 131

Answer: D

Question 74

The term "Birdie" is related to which game?

A Golf

B Baseball

C Basketball

D Polo

Answer: A

Question 75

Name the author of the book "All About Women".

A Priya Kumar

B Taslima Nasreen

C Shobha De

D Geeta Choubey

Answer: B

Mathematics

Instructions

For the following questions answer them individually

Question 76

Profit of Rs 135200 has to be divided among three partners Aashay, Bhairav and Chetan in the ratio 4:3:6. How much Rs. does Chetan get?

A 31200

B 41600

C 62400

D 93600

Answer: C

Explanation:

Total amount to be distributed = Rs. 1,35,200

Ratio in which amount is divided between Aashay, Bhairav and Chetan = 4:3:6

$$\Rightarrow \text{Amount that Chetan will get} = \frac{6}{(4+3+6)} \times 135200$$

$$= \frac{6}{13} \times 135200$$

$$= 6 \times 10400 = \text{Rs. } 62,400$$

\Rightarrow Ans - (C)

Question 77

Sum of lengths of all edges of a cube is 84 cm, find its volume?

A 686 cubic cms

B 343 cubic cms

C 171.5 cubic cms

D 514.5 cubic cms

Answer: B

Explanation:

Let the edge of the cube = a cm

Number of edges in a cube = 12

Sum of all the edges = $12a = 84$

$$\Rightarrow a = \frac{84}{12} = 7$$

\therefore Volume of cube = a^3

$$= (7)^3 = 343 \text{ cm}^3$$

\Rightarrow Ans - (B)

Question 78

Two numbers are 30% and 60% lesser than a third number. By how much percent is the second number to be enhanced to make it equal to the first number?

A 75 percent

B 42.86 percent

C 30 percent

D 50 percent

Answer: A

Explanation:

Let third number = $100x$

First number is 30% less than $100x$ and second number is 60% less than $100x$

=> First number = $70x$ and Second number = $40x$

To make second number equal to first number, it should be enhanced by = $70x - 40x = 30x$

=> Required % = $\frac{30x}{40x} \times 100 = 3 \times 25 = 75\%$

=> Ans - (A)

Question 79

Two cars travel from city A to city B at a speed of 30 and 45 km/hr respectively. If one car takes 2.5 hours lesser time than the other car for the journey, then the distance between City A and City B is:

A 270 km

B 338 km

C 180 km

D 225 km

Answer: D

Explanation:

Let the distance between City A and City B = d km

Speed of first car = 30 km/hr and speed of second car = 45 km/hr

Let time taken by first car = t hrs and time taken by second car = $(t - 2.5)$ hrs

Using, speed = distance/time for first car :

$$\Rightarrow \frac{d}{t} = 30$$

$$\Rightarrow d = 30t \text{ -----(i)}$$

$$\text{For second car, } \Rightarrow \frac{d}{t-2.5} = 45$$

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

$$\Rightarrow 30t = 45t - 112.5$$

$$\Rightarrow 45t - 30t = 112.5$$

$$\Rightarrow t = \frac{112.5}{15} = 7.5 \text{ hrs}$$

From equation (i), $\Rightarrow d = 30 \times 7.5 = 225 \text{ km}$

\Rightarrow Ans - (D)

Question 80

If $7x + 2 \geq x - 2$ and $7 + 2x \geq 3 + 3x$; then x can take which of the following values?

A 5

B 3

C -3

D -5

Answer: B

Explanation:

Expression 1 : $7x + 2 \geq x - 2$

$$\Rightarrow 7x - x \geq -2 - 2$$

$$\Rightarrow 6x \geq -4$$

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

Expression 2 : $7 + 2x \geq 3 + 3x$

$$\Rightarrow 3x - 2x \leq 7 - 3$$

$$\Rightarrow x \leq 4 \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $\frac{-2}{3} \leq x \leq 4$

The only value that x can take among the options = 3

\Rightarrow Ans - (B)

Question 81

If $\frac{(1+\cos A)}{(1-\cos A)} = x$, then x is

A $\frac{\cot^2 A}{(\sec A - 1)^2}$

B $\frac{\cot^2 A}{(\sec A + 1)^2}$

C $\frac{\tan^2 A}{(\sec A + 1)^2}$

D $\frac{\tan^2 A}{(\sec A - 1)^2}$

Answer: D

Explanation:

$$\text{Expression : } \frac{(1+\cos A)}{(1-\cos A)} = x$$

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

$$\begin{aligned} &= \frac{1+\cos A}{1-\cos A} \times \frac{(1-\cos A)}{(1-\cos A)} \\ &= \frac{1-\cos^2 A}{(1-\cos A)^2} = \frac{\sin^2 A}{(1-\cos A)^2} \end{aligned}$$

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

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

=> Ans - (D)

Question 82

There is 40% increase in an amount in 8 years at simple interest. What will be the compound interest of Rs. 36000 after 2 years at the same rate?

- A Rs 6150
- B Rs 7687.5
- C Rs 3690
- D Rs 4612.5

Answer: C

Explanation:

Let the principal = Rs. $100x$

$$\Rightarrow \text{Amount after simple interest} = \frac{140}{100} \times 100 = \text{Rs. } 140x$$

$$\Rightarrow \text{Simple interest} = 140x - 100x = \text{Rs. } 40x$$

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

$$\Rightarrow 40x = \frac{100x \times 8 \times R}{100}$$

$$\Rightarrow R = \frac{40}{8} = 5\%$$

$$\text{Compound interest of Rs. 36,000 for 2 years} = P \left[\left(1 + \frac{R}{100}\right)^T - 1 \right]$$

$$= 36,000 \left[\left(1 + \frac{5}{100}\right)^2 - 1 \right]$$

$$= 36,000 \left[\left(\frac{21}{20}\right)^2 - 1 \right]$$

$$= 36,000 \times \frac{441-400}{400} = 36,000 \times \frac{41}{400}$$

$$= 90 \times 41 = \text{Rs. } 3,690$$

=> Ans - (C)

Question 83

Which of the following quadratic equations has real roots?

A $4x^2 - 3x + 6 = 0$

B $2x^2 + 7x + 6 = 0$

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

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

Answer: B

Explanation:

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

(A) : $4x^2 - 3x + 6 = 0$

=> $D = (-3)^2 - 4(4)(6) = 9 - 96 = -87$

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

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

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

=> $D = (-2)^2 - 4(1)(4) = 4 - 16 = -12$

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

=> $D = (-4)^2 - 4(3)(3) = 16 - 36 = -20$

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

Question 84

If 1 dupatta is offered free on purchase of 4 dupattas priced Rs 1300 each what is the effective discount on each dupatta?

A 66.67 percent

B 20 percent

C 25 percent

D 12.5 percent

Answer: B

Explanation:

Cost price of 1 dupatta = Rs. 1300

Cost price of 5 dupattas = $5 \times 1300 = \text{Rs.}6,500$

If 1 dupatta is offered free on purchase of 4 dupattas, \Rightarrow Cost of 4 dupattas = $4 \times 1300 = \text{Rs.}5200$

\Rightarrow Effective discount = $\frac{6500-5200}{6500} \times 100$

$= \frac{1300}{65} = \frac{100}{5} = 20\%$

\Rightarrow Ans - (B)

Question 85

The diagonals are congruent in a

- A Parallelogram
- B Rhombus
- C Isosceles trapezium
- D Kite

Answer: C

Explanation:

In an isosceles trapezium, the non parallel sides are equal in length, and thus the diagonals are congruent.

\Rightarrow Ans - (C)

Question 86

If $9x - 6(3 - x) = 12$, then the value of x is

- A 2
- B 4
- C 6
- D 9

Answer: A

Explanation:

Expression : $9x - 6(3 - x) = 12$

$\Rightarrow 9x - 18 + 6x = 12$

$\Rightarrow 15x = 12 + 18 = 30$

$\Rightarrow x = \frac{30}{15} = 2$

=> Ans - (A)

Question 87

If $x - 2y = 2$ and $3x + y = 20$, then the value of (x,y) is

A (6, 2)

B (4, 1)

C (3, 2)

D (5, 5)

Answer: A

Explanation:

Equation 1 : $x - 2y = 2$

Equation 2 : $3x + y = 20$

Multiplying equation (ii) by 2

=> $6x + 2y = 40$ -----(iii)

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

=> $(x + 6x) = 2 + 40$

=> $7x = 42$

=> $x = \frac{42}{7} = 6$

Substituting value of x in equation (i)

=> $2y = 6 - 2 = 4$

=> $y = \frac{4}{2} = 2$

$\therefore (x, y) = (6, 2)$

=> Ans - (A)

Question 88

The area of a rectangle is 1200 sq cm and its perimeter 140 cm. What is the length of its diagonal?

A 50 cm

B 30 cm

C 40 cm

D 60 cm

Answer: A

Explanation:

Let the length of the rectangle be l cm and breadth be b cm

$$\text{Perimeter of rectangle} = 2(l + b) = 140$$

$$\Rightarrow (l + b) = \frac{140}{2} = 70$$

$$\Rightarrow l = 70 - b \text{ -----(i)}$$

$$\text{Area} = l \times b = 1200$$

Substituting value of l from equation (i)

$$\Rightarrow (70 - b)b = 1200$$

$$\Rightarrow b^2 - 70b + 1200 = 0$$

$$\Rightarrow b^2 - 40b - 30b + 1200 = 0$$

$$\Rightarrow b(b - 40) - 30(b - 40) = 0$$

$$\Rightarrow (b - 40)(b - 30) = 0$$

$$\Rightarrow b = 30, 40$$

Thus, the length $l = 40$ cm and breadth $b = 30$ cm

$$\therefore \text{Diagonal of rectangle} = \sqrt{l^2 + b^2}$$

$$= \sqrt{(40)^2 + (30)^2} = \sqrt{1600 + 900}$$

$$= \sqrt{2500} = 50 \text{ cm}$$

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

Question 89

The measures of the four angles of a quadrilateral are in the ratio 3:4:5:6. What is the measure of the biggest angle?

A 120°

B 100°

C 80°

D 60°

Answer: A

Explanation:

Let the four angles of the quadrilateral be $3x$, $4x$, $5x$ and $6x$

$$\text{Sum of internal angles of a quadrilateral} = 360^\circ$$

$$\Rightarrow 3x + 4x + 5x + 6x = 360^\circ$$

$$\Rightarrow 18x = 360^\circ$$

$$\Rightarrow x = \frac{360}{18} = 20^\circ$$

$$\therefore \text{Biggest angle} = 6x = 6 \times 20 = 120^\circ$$

\Rightarrow Ans - (A)

Question 90

The average marks of 45 students is shown as 65. It includes a wrong entry of 84 marks instead of 48 marks. The correct average is:

A 65.8 marks

B 67.4 marks

C 62.6 marks

D 64.2 marks

Answer: D

Explanation:

Total marks of 45 students = $45 \times 65 = 2925$

Replacing 84 by 48 in the data, \Rightarrow Total marks = $2925 - 84 + 48 = 2889$

$$\Rightarrow \text{Correct average} = \frac{2889}{45} = \frac{321}{5} = 64.2$$

\Rightarrow Ans - (D)

Question 91

The line passing through point $(-3,1)$ and point $(x,5)$ is parallel to the line passing through point $(-2,-1)$ and point $(6,3)$. What is the value of x ?

A -5

B -2

C 2

D 5

Answer: D

Explanation:

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

$$\Rightarrow \text{Slope of line passing through } (-2,-1) \text{ and } (6,3) = \frac{3+1}{6+2} = \frac{4}{8}$$

$$\text{Slope of line passing through } (-3,1) \text{ and } (x,5) = \frac{5-1}{x+3} = \frac{4}{(x+3)}$$

Also, slopes of parallel lines are equal.

$$\Rightarrow \frac{4}{x+3} = \frac{4}{8}$$

$$\Rightarrow x + 3 = 8$$

$$\Rightarrow y = 8 - 3 = 5$$

\Rightarrow Ans - (D)

Question 92

A shopkeeper by selling 22 Skechers shoes, earns a profit equal to the selling price of 6 Skechers shoes. His profit percentage is:

A 27.2 percent

B 37.5 percent

C 54.4 percent

D 16.9 percent

Answer: B

Explanation:

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

Selling price of a shoe = $Rs.y$

\Rightarrow Selling price of 6 shoes = $Rs.6y$

According to ques, $\Rightarrow 22(y - x) = 6y$

$$\Rightarrow 22y - 22x = 6y$$

$$\Rightarrow 16y = 22x$$

$$\Rightarrow \frac{x}{y} = \frac{16}{22} = \frac{8}{11}$$

Let Cost price, $x = 8$ and selling price, $y = 11$

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

$$= \frac{11-8}{8} \times 100$$

$$= \frac{3}{2} \times 25 = 37.5\%$$

\Rightarrow Ans - (B)

Question 93

If $\cos A = x$, then x is

A $\sqrt{(1 - \cos^2 A)}$

B $\sqrt{(1 + \sin^2 A)}$

C $\sqrt{(1 + \cos^2 A)}$

D $\sqrt{(1 - \sin^2 A)}$

Answer: D

Explanation:

$$\because \sin^2 A + \cos^2 A = 1$$

$$\Rightarrow \cos^2 A = 1 - \sin^2 A$$

$$\Rightarrow \cos A = \sqrt{1 - \sin^2 A}$$

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

Question 94

If $\operatorname{cosec} 45^\circ - \sin 30^\circ = x$, then x is ?

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

B $\frac{\sqrt{6}-1}{\sqrt{2}}$

C $\sqrt{3} + 2$

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

Answer: D

Explanation:

$$\text{Expression : } \operatorname{cosec} 45^\circ - \sin 30^\circ = x$$

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

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

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

Question 95

Mayur can complete a work in 27 hours. If he is joined by Jayantika who is 100% more efficient, in what time will they together finish the work?

A 6 hours

B 3 hours

C 9 hours

D 10 hours

Answer: C

Explanation:

Let total work to be done = 54 units

Mayur's efficiency = $\frac{54}{27} = 2$ units/hr

Jayantika is 100% more efficient than Mayur, => Jayantika's efficiency = $\frac{100+100}{100} \times 2 = 4$ units/hr

=> Mayur and Jayantika 1 day's work = 2 + 4 = 6 units/hr

∴ Time taken by them to finish the work together = $\frac{54}{6} = 9$ hours

=> Ans - (C)

Question 96

The reciprocal of the sum of the reciprocals of 3/8 and 8/11 is:

A 97/24

B 24/97

C 88/97

D 97/88

Answer: B

Explanation:

Sum of the reciprocals of 3/8 and 8/11

$$= \frac{8}{3} + \frac{11}{8}$$

$$= \frac{(64+33)}{24} = \frac{97}{24}$$

=> Reciprocal of 97/24 = $\frac{24}{97}$

=> 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	2	48	60%
Executive	9	20	20%
Trainee	2	2	10%

What Is the average bonus (in rupees)?

A 944000

B 723076

C 240000

D 332000

Answer: B

Explanation:

Total bonus of managers (in lakh) = $2 \times 48 \times \frac{60}{100} = 57.6$ lakhs

Total bonus of executive (in lakh) = $9 \times 20 \times \frac{20}{100} = 36$ lakhs

Total bonus of trainee (in lakh) = $2 \times 2 \times \frac{10}{100} = 0.4$ lakhs

=> Average bonus in rupees = $\frac{(57.6+36+0.4)}{(2+9+2)}$

= $\frac{94}{13} = 7.23076$ lakhs = 7,23,076

=> Ans - (B)

Question 98

Refer the below data table and answer the following Question.

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

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

A 2011 & 2013

B 2013 & 2015

C 2011 & 2012

D 2014 & 2012

Answer: D

Explanation:

Total exports from the three companies together in (lakhs) :

2011 = 2000 + 1000 + 3000 = 6000

2012 = 3000 + 4000 + 1000 = 8000

2013 = 4000 + 3000 + 3000 = 10000

2014 = 3000 + 4000 + 1000 = 8000

$$2015 = 2000 + 5000 + 2000 = 9000$$

Clearly, total exports in 2012 and 2014 are equal to 8000

=> Ans - (D)

Question 99

Refer the below data table and answer the following Question.

Year	Profit or (-Loss) in Rs crore
2011	-15
2012	-5
2013	-20
2014	15
2015	20

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

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

Answer: D

Explanation:

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

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

$$= 35 - 40 = -5$$

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

=> Ans - (D)

Question 100

Refer the below data table and answer the following Question.

India's Exports in 2015	Value in Million US\$
Jewellery	1000
Software	900
Cotton	575
Steel	925
Electronics	950

Jewellery was what percent of total exports?

A 25.49 percent

B 27.99 percent

C 20.49 percent

D 22.99 percent

Answer: D

Explanation:

Value in millions of Jewelry = 1000

Total exports = 1000 + 900 + 575 + 925 + 950 = 4350

=> % of Jewelry in total exports = $\frac{1000}{4350} \times 100$

= $\frac{1000}{43.5} = 22.988 \approx 22.99\%$

=> Ans - (D)