SSC MTS 23 February 2014 Shift 1

Reasoning

Instructions
For the following questions answer them individually

Question 1

7,14,23,34,?

A 46

B 47

C 44

D 45

Answer: B

Explanation:
Consecutive odd numbers starting from 7 are added.

7 + 7 = 14

14 + 9 = 23

23 + 11 = 34

34 + 13 = **47**

=> Ans - (B)

Question 2

AE,FJ,KO,?,UY

A QN

B TQ

C NP

D PT

Answer: D

Explanation:
Series : AE,FJ,KO,?,UY

The pattern followed in each letter of the terms is :

1st letter : A (+5 letters) = F (+5 letters) = K (+5 letters) = **P** (+5 letters) = U

2nd letter : E (+5 letters) = J (+5 letters) = O (+5 letters) = **T** (+5 letters) = Y

Thus, missing term = **PT**

=> Ans - (D)

Question 3

From the given alternatives select the word which cannot be formed using the letters of the given word.
DEPART

A PET

B PARK

C PART

D DEAR

Answer: B

Explanation:
The word 'DEPART' does not contain any 'K', thus the word **Park** cannot be formed.

=> Ans - (B)

Question 4

In a coded language, MANAGER is written as REGANAM. How will ASSISTANT be wriiten in that code?

A TNATSISSA

B TNATISSSA

C TNATSSIA

D TNATSISAS

Answer: A

Explanation:
MANAGER is written as REGANAM

The pattern followed is that the letters are written in reverse order, i.e. first word at last position, second at second last position and so on.

Thus, ASSISTANT : **TNATSISSA**

=> Ans - (A)

Question 5

A boy introduced a girl as the daughter of the son of father of his uncle. How is the girl related to the boy ?

A Aunt

B Sister

C Cousin

D Cannot be determined

Answer: D

Explanation:
Father of boy's uncle = father's grandfather

Now, son of his grandfather = boy's father or uncle

The girl is the daughter of boy's father/uncle, => Girl is either his sister or cousin.

=> Ans - (D)

Question 6

Which one of the given responese would be a meaningful order of the following in ascending order ?
1.Phrase
2.Alphabet
3.Sentence
4.Word

A 2,1,4,3

B 1,2,3,4

C 2,4,1,3

D 2,4,3,1

Answer: D

Explanation:
The meaningful order of a passage is :

= Alphabet -> Word -> Sentence -> Phrase

$\equiv$ 2,4,3,1

=> Ans - (D)

Question 7

3:7::15:__?

A 31

B 35

C 45

D 49

Answer: A

Explanation:
Expression = 3:7::15:__?

The pattern followed is = $n : 2n + 1$

Eg :- $(2 \times 3) + 1 = 7$

Similarly, $(2 \times 15) + 1 = 31$

=> Ans - (A)

Question 8

Kalidas:Meghdoot::Kautilya:?

A Ramayana

B Arthashastra

C Kamayani

D Kadambari

Answer: B

Explanation:
Expression = Kalidas:Meghdoot::Kautilya:?

The second is the poem written by the first, i.e. Meghdoot was written by Kalidas, similarly Kautilya wrote **Arthashastra.**

=> Ans - (B)

Question 9

Water:Ocean::Sand: ?

A Island

B Waves

C River

D Desert

Answer: D

Explanation:
Expression = Water:Ocean::Sand: ?

First is found in second, i.e. water is found in the ocean, similarly sand is found in **desert.**

=> Ans - (D)

Question 10

ABC:XYZ::CDE: ?

A UVW

B WXY

C AVW

D VWX

Answer: D

Explanation:
Expression = ABC:XYZ::CDE: ?

The pattern followed is that if we reverse the order of the second term in each pair, and each letter is replaced by the letter at its position, when the alphabets are reversed, i.e. first is replaced by last, second by second last and so on.

Eg :- ABC : ZYX

Thus, C -> X , D -> W , E -> V

∴ CDE : **VWX**

=> Ans - (D)

Instructions

In question no. 11 to 13, select the one which is different from the other three alternatives.

Question 11

A 42-49

B 35-62

C 63-70

D 28-21

Answer: B

Explanation:
The mod of the difference between each pair is 7

$|42 - 49| = 7$

$|35 - 62| = 27 \neq 7$

$|63 - 70| = 7$

$|28 - 21| = 7$

=> Ans - (B)

Question 12

A Engineer

B School

C Lawyer

D Doctor

Answer: B

Explanation:
Engineer, lawyer and doctor are professions, while school is an educational institution, hence it is the odd one out.

=> Ans - (B)

Question 13

A SRPQ

B YWTV

C IHFG

D NMKL

Answer: B

Explanation:
(A) : S (-1 letter) = R (-2 letters) = P (+1 letter) = Q

(B) : Y (**-2** letters) = W (**-3** letters) = T (**+2** letters) = V

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

(D) : N (-1 letter) = M (-2 letters) = K (+1 letter) = L

=> Ans - (B)

Instructions

For the following questions answer them individually

Question 14

Six persons are sitting in a circle F, K, N, M, L, O . 'F' is between K and N. 'N' is opposite of 'M; and 'L' is not the neighbour of 'N'. who is opposite 'K' ?

A M

B O

C J

D L

Answer: B

Question 15

Select the correct combination mathematical signs to replace signs and to balance the following equation:

$35 * 7 * 25 * 15 * 2$

A $+ \div = \times$

B $\div + = \times$

C $\times = \div +$

D $+ = \div \times$

Answer: B

Explanation:
Only option B fits into the given equation

$35 \div 7 + 25 = 15 \times 2$

$5 + 25 = 15 \times 2$

$30 = 30$

Hence, option B is the correct answer.

Question 16

Some equations are solved on the basis of a certain system. Find the correct answer for the unsolved equation on that basis.

$If 7 \times 9 \times 6 \times 5 \times = 5 \times 7 \times 4 \times 3 \times,$

$then 8 \times 4 \times 14 \times 12 \times = ?$

A $5 \times 3 \times 7 \times 10 \times$

B $6 \times 3 \times 9 \times 11 \times$

C $6 \times 2 \times 12 \times 10 \times$

D $6 \times 4 \times 8 \times 9 \times$

Answer: E

Question 17

Select the missing number from the given respones.
121 156 105
145 187 126
115 190 ?

A 231

B 225

C 255

D 305

Answer: C

Explanation:
The pattern followed here is,

156 - 121 = 35, 35 x 3 = 105

187 - 145 = 42, 42 x 3 = 126,

190 - 115 = 75 x 3 = 225.

Hence, option C is the correct answer.

Question 18

Deepa is standing facing South. She goes 20 metres ahead and turns right and goes 30 metres. Now she turns left and goes for 40 metres and turns right. In which direction is she headed now ?

A North

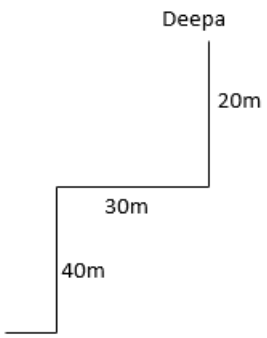
B South

C East

D West

Answer: D

Explanation:



Finally deepa will be facing towards west.

Hence, option D is the correct answer.

Question 19

Two statements are given 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 are to decide which of the given conclusions definitely follows from the given statements. Indicate your answer.

Statements:
All pencils are rails.
All rails are stations.
Conclusions:
I. All stations are pencils.
II. Some stations are pencils.

A Both Conclusion I and II follow

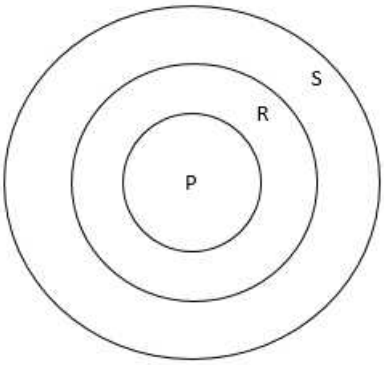
B Neither Conclusion I nor II follows

C Only Conclusion I follows

D Only Conclusion II follows

Answer: D

Explanation:



From the above diagram, some Stations are Pencils is definitely true, whereas all Stations are Pencils is false.

Hence, only conclusion II follows.

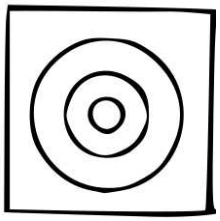
Hence, option D is the correct answer.

Question 20

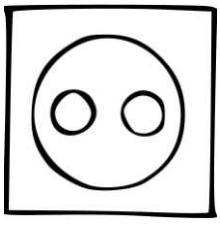
Identify the diagram that best represents the relationship among the classes given below :

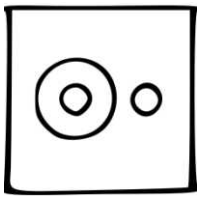
Doctors, Engineers, Lawyers

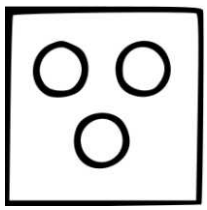
A



B



C 

D 

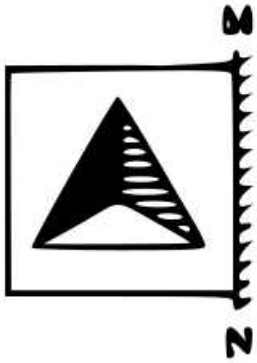
Answer: D

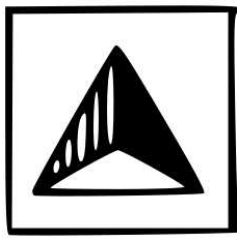
Explanation:
All three entities are entirely different.

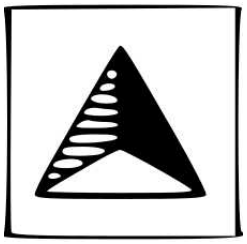
Hence, option D is the correct answer.

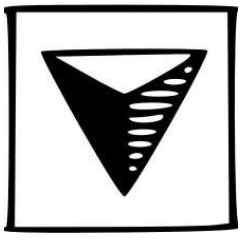
Question 21

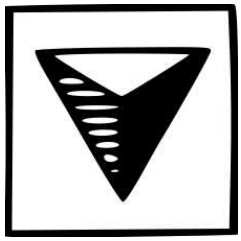
If a mirror is placed on the line MN, then which of the answer figures is the right image of the given image ?



A 

B 

C 

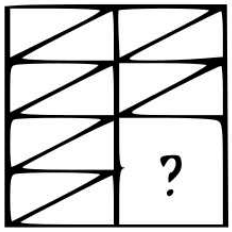
D 

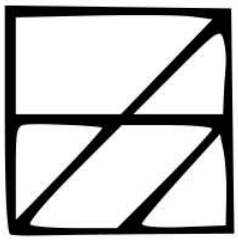
Answer: B

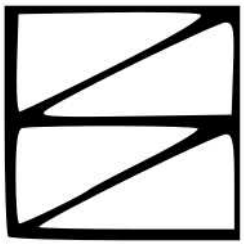
Explanation:
Figure in option B is the mirror image of the given figure.

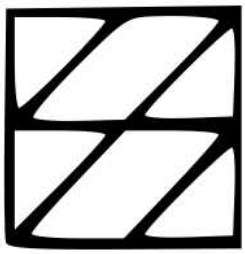
Question 22

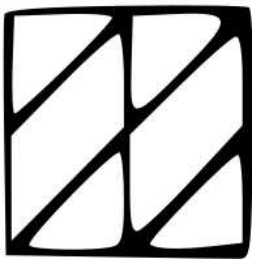
Which answer figure will complete the pattern in the question figure ?



A 

B 

C 

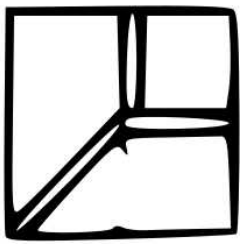
D 

Answer: B

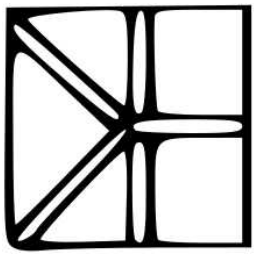
Explanation:
To complete the pattern, figure given in only option B is correct.

Question 23

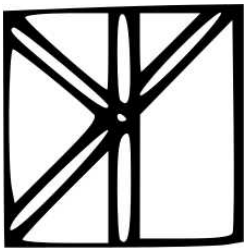
From the given answer figures, select the one in which the question figure is hidden/embedded.



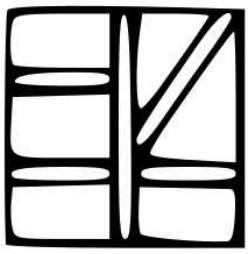
A



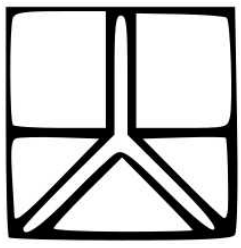
B



C



D



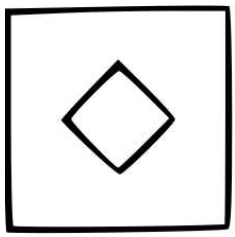
Answer: A

Explanation:
Given figure can be embedded in only option A.

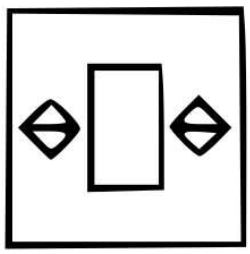
Question 24

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

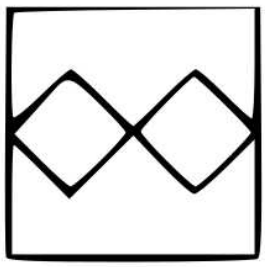
A



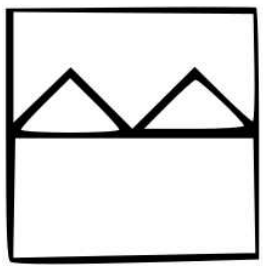
B



C



D



Answer: C

Question 25

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 in the two matrices given below. 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 by first by its row and next by its column, eg. 'P' can be represented by 04, 11, 30, etc., Similarly, you have to identify set for the word 'BASE'

Matrix-I

	0	1	2	3	4
0	E	A	R	W	P
1	W	P	A	E	R
2	A	W	P	R	E
3	P	R	E	A	W
4	R	E	W	P	A

Matrix-II

	5	6	7	8	9
5	A	B	K	T	C
6	B	C	T	K	S
7	T	S	C	B	K
8	K	T	S	C	B
9	C	K	B	S	T

A 65,01,77,13

B 78,02,98,33

C 97,02,87,14

D 89,12,76,13

Answer: D

Explanation:
As per the given question

B = 56, 65, 78, 89, 97

A = 01, 12, 20, 33, 44

S = 69, 76, 87, 98

E = 00, 13, 24, 32, 41

"89,12,76,13" can be the answer.

Hence, option D is the correct answer.

English

Instructions
For the following questions answer them individually

Question 26

The son wants to purchase a new car, but his father is dragging his feet

A acting in a slow and hesitant manner

B acting methodically

C acting quickly with firm conviction

D acting courageously

Answer: A

Question 27

The student passed out in the lab during the practical exam

A fell down

B became anxious

C rushed out

D fainted

Answer: D

Question 28

My friend Rahim is fair and square in all his dealings.

A dishonest and complex

B cruel

C rough and complex

D honest and simple

Answer: D

Question 29

I knew that if the animal was at home in that moment it would probably be sound asleep

A within that moment

B about that moment

C at that moment

D No improvement

Answer: C

Question 30

What would you have done if you are attacked by a bandit ?

A if you have been attacked by a bandit

B if you would have been attacked by a bandit

C if you were attacked by a bandit

D No improvement

Answer: C

Question 31

She works so that she may not foil

A or that she may not fail

B therefore she may fail

C lest she should fail

D No improvement

Answer: D

Question 32

Looking out of the window the little boy saw a kite entangled in the branches of the gulmohar tree.

A Looking at the window

B Peeping in at the window

C Gazing out into the window

D No improvement

Answer: D

Question 33

If you do not mend your behaviour, you will suffer.

A bend till

B repair

C tend

D No improvement

Answer: D

Question 34

A place where money is coined

A Press

B Mint

C Lair

D Archive

Answer: B

Question 35

A series of lectures or lessons.

A Catalogue

B Panel

C Course

D Syllabus

Answer: C

Question 36

A false name adopted by an author for writing.

A Nomenclature

B Title

C Nickname

D Pseudonym

Answer: D

Question 37

One who possesses many talents.

A Gifted

B Talented

C Versatile

D Exceptional

Answer: C

Question 38

A very accurate from of clock

A Galvanometer

B Calorimeter

C Voltameter

D Chronometer

Answer: D

Instructions

Four words are given in each question, out of which only one word is correctly spelt. Find the correct spelt word and mark your answer in the answer sheet.

Question 39

A Millinar

B Millenar

C Miliner

D Milliner

Answer: E

Question 40

A Privillage

B Privilage

C Priviledage

D Privilege

Answer: E

Question 41

A Questionnaire

B Questionnare

C Questionnair

D Questionnairs

Answer: E

Question 42

A Amoeba

B Ameoba

C Amieba

D Ameboa

Answer: E

Question 43

A Annihilate

B Annhillate

C Anihilate

D Annihilet

Answer: E

Question 44

A Commitee

B Connitea

C Committee

D Comittee

Answer: E

Instructions
For the following questions answer them individually

Question 45

It is cool today,_____?

A aren't it

B didn't it

C wasn't it

D isn't it

Answer: E

Instructions

"Something is very wrong," says the detective. 1 know!" says Ms. Gervis. "It is wrong that someone has stolen from me!" The detective looks around Ms. Gervis' apartment. "That is not what I am talking about. ma'am. What is wrong is that I do not understand how the robber got in and out" Ms. Gervis and the detective stand in silence. Ms. Gervis' eyes are full of tears. Her hands are shaking. "The robber did not come through the window," says the detective. 'These windows have not been opened or shut in months." The detective looks at the fireplace. "The robber did not squeeze down here."

The detective walks to the front door. He examines the latch. And since there are no marks or scratches, the robber definitely did not try to break the lock." 1 have no idea how he did it," says a bothered Ms. Gervis. it is a big mystery." "And you say the robber stole nothing else,?" asks the detective. "No money, no jewellery, no crystal ?" "That's right, detective. He took only what was important to me Ms. Gervis says with a sigh. ere isohly one thing I can do now." "And what is that r the detective asks with surpnse. 1 will stop baking cakes," Ms. GeMs says. 'They are mine to give away. They are not for someone to steal." "You can't do that!" says the detective with alarm. "Who will bake those delicious cakes r 1 am sorry. I do not know," says Ms. Gervis. "I must solve this case immediately!" says the detective,

Question 46

What does Ms. Gervis say is a big mystery?

A How the robber got in

B How the robber got in and out

C How the robber got out

D How the robber stole

Answer: B

Question 47

What is stolen?

A Crystal

B Money

C Cakes

D Jewellery

Answer: C

Question 48

Why does the detective say. I must solve this case immediately?

A Because Ms. Gervis is scared

B Because Ms. Gervis is crying

C Because Ms. Gervis is worried about who stole from her house

D Because Ms. Gervis says she won't bake cake again

Answer: D

Question 49

What does the expression 'her hands are shaking' mean her?

A Ms. Gervis is shivering with fever

B Ms. Gervis is shivering with wonder

C Ms. Gervis is shivering with cold

D Ms. Gervis is shivering with fear

Answer: D

Question 50

Why does the detective say that the robber did not come through the front door?

A The latch was not opened

B The latch was no doorbell

C The latch was no lock

D The latch was no scratches

Answer: D

Quant

Instructions
For the following questions answer them individually

Question 51

A sales representative will receive a 15% commission on a sale of 2,800. If he has already received an advance of 150 on that commission, the remaining amount of commission is

A 320

B 420

C 120

D 270

Answer: D

Explanation:
Total amount to be received by the person = $\frac{15}{100} \times 2800 = 420$

Amount received = 150

=> Amount left = $420 - 150 = 270$

=> Ans - (D)

Question 52

A railway train 100 metres long is running at the speed of 30 km/hr. In what time does it pass a man standing near a line

A 10 seconds

B 13 seconds

C 12 seconds

D 15 seconds

Answer: C

Explanation:
Speed of train = 30 km/hr = $\left(30 \times \frac{5}{18}\right)$ m/s = $\frac{25}{3}$ m/s

Length of train = 100 m

Time taken = distance/time

= $100 \div \frac{25}{3}$

= $100 \times \frac{3}{25}$

= $4 \times 3 = 12$ seconds

=> Ans - (C)

Question 53

Raju has to cover a distance of 240 km in 4 hours. If he covers one-third of the journey in 2/7th time, what is his speed at the beginning of the journey?

A 70 km/hr

B 75 km/hr

C 60 km/hr

D 65 km/hr

Answer: A

Explanation:

Distance covered = $\frac{1}{3} \times 240 = 80$ km

Time taken = $\frac{2}{7} \times 4 = \frac{8}{7}$ hr

=> Speed = distance/time

= $80 \div \frac{8}{7}$

= $80 \times \frac{7}{8}$

= $10 \times 7 = 70$ km/hr

=> Ans - (A)

Question 54

X borrowed some money from a source at 8% simple interest and lent it to Y at 12% simple interest on the same day and gained Rs. 4,800 after 3 years. The amount X borrowed, (in Rs.), is

A 42,000

B 60,000

C 1,20,000

D 40,000

Answer: D

Explanation:

Let amount that X borrowed = Rs. $100x$

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

Interest X need to return to the source at 8% in 3 years

= $A = \frac{100x \times 8 \times 3}{100} = Rs.\ 24x$

Similarly, interest X get from Y = $A' = \frac{100x \times 12 \times 3}{100} = Rs.\ 36x$

According to ques,

=> $A' - A = 4800$

=> $36x - 24x = 12x = 4800$

=> $x = \frac{4800}{12} = 400$

∴ Amount X borrowed = $100 \times 400 = Rs.\ 40,000$

=> Ans - (D)

Question 55

Ram borrows a certain sum of money at 8% per annum simple interest and Rahim borrows Rs. 2,000 at 5% per annum simple interest. If the interest at the end of 3 years is equal, then the amount borrowed by Ram is

A 1,250

B 1,500

C 2,000

D 1,000

Answer: A

Explanation:
Rahim borrows Rs. 2,000 at 5% per annum simple interest.

Time period = 3 years

Let amount that Ram borrowed = Rs. x at 8%

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

According to ques,

=> $\frac{x \times 8 \times 3}{100} = \frac{2000 \times 5 \times 3}{100}$

=> $8x = 10,000$

=> $x = \frac{10000}{8} = Rs.\ 1250$

=> Ans - (A)

Question 56

A bookseller sells a book at a profit of 10%. If he had bought it at 4% less and sold it for Rs. 6 more, he would have gained $18\frac{3}{4}$ % The cost price of the book is

A 160

B 170

C 150

D 155

Answer: C

Explanation:
Let cost price of the book = Rs. $100x$

Profit % = 10%

=> Selling price = $\frac{10}{100} \times 100x = Rs.\ 110x$

Now, new cost price = $C' = 100x - \left(\frac{4}{100} \times 100x\right) = Rs.\ 96x$

Similarly, new selling price = $S' = Rs.\ (110x + 6)$

=> Profit % = $\frac{(S' - C')}{C'} \times 100 = 18\frac{3}{4}$

=> $\frac{(110x+6)-96x}{96x} \times 100 = \frac{75}{4}$

=> $\frac{14x+6}{96x} = \frac{75}{4} \times \frac{1}{100}$

=> $\frac{14x+6}{96x} = \frac{3}{16}$

=> $14x + 6 = \frac{3}{16} \times (96x)$

=> $14x + 6 = 18x$

=> $18x - 14x = 4x = 6$

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

$\therefore$ Cost price = $100 \times 1.5 = Rs.\ 150$

=> Ans - (C)

Question 57

The length and breadth of a rectangle are 20 m and 15 m respectively. If length is Increased by 20% and the breadth by 30%, the percentage increase in its area is

A 54%

B 56%

C 50%

D 52%

Answer: B

Explanation:
Length of rectangle = $l = 20$ m and Breadth = $b = 15$ m

=> Area = $A = l \times b = (20 \times 15) = 300\ m^2$

Similarly, new length = $l' = 20 + (\frac{20}{100} \times 20) = 20 + 4 = 24$ m

=> New breadth = $b' = 15 + (\frac{30}{100} \times 15) = 15 + 4.5 = 19.5$ m

New area = $A' = 24 \times 19.5 = 468\ m^2$

$\therefore$ Increase in area = $\frac{(468-300)}{300} \times 100$

= $\frac{168}{3} = 56\%$

=> Ans - (B)

Question 58

The average height of 8 students is 152 cm. Two more students of heights 144 cm and 155 cm join the group. What is the new average height ?

A 151.5 cm

B 152.5 cm

C 151 cm

D 150.5 cm

Answer: A

Explanation:
Average height of 8 students = 152 cm

=> Total height of 8 students = $152 \times 8 = 1216$ cm

After addition of 2 students, total students of 10 students = $1216 + 144 + 155 = 1515$

$\therefore$ New average height = $\frac{1515}{10} = 151.5$ cm

=> Ans - (A)

Question 59

The batting average of a cricket player for 30 innings is 40 runs. His highest score exceeds his lowest score by 100 runs. If these two innings are not included, the average of the remaining 28 innings is 38 runs. The lowest score of the player is

A 18

B 20

C 12

D 15

Answer: A

Explanation:
Batting average of the cricket player for 30 innings = 40 runs

=> Total runs in 30 innings = $40 \times 30 = 1200$

Average of 28 innings = 38

=> Total runs in 28 innings = $38 \times 28 = 1064$

Let highest score = x and lowest score = y

Now, sum of highest and lowest score = $x + y = (1200 - 1064) = 136$ ----------(i)

According to ques, => $x - y = 100$ ----------(ii)

Subtracting equation (ii) from (i),

=> $2y = 136 - 100 = 36$

=> $y = \frac{36}{2} = 18$ runs

=> Ans - (A)

Question 60

Aman sells two watches at 99 each. On one he get 10% profit and on the other he loses 10%. His net gain or loss percent is

A loss of 1%

B no profit no loss

C profit of 10%

D loss of 10%

Answer: A

Explanation:
Selling price of both watches = Rs. 99

Cost price of watch on which he get 10% profit = $C_1 = 99 \times \frac{100}{100+10}$

$= 99 \times \frac{10}{11} = Rs.\ 90$

Similarly, cost price of watch on which he get 10% loss = $C_2 = 99 \times \frac{100}{100-10}$

= $99 \times \frac{10}{9} = Rs.\ 110$

=> Total CP = $(110 + 90) = Rs.\ 200$

and total SP = $(99 + 99) = Rs.\ 198$

$\therefore$ *Loss %* = $\frac{(200-198)}{200} \times 100 = 1\%$

=> Ans - (A)

Question 61

If a person lost 8% by selling an article for Rs. 1,035, he bought the article for

A 1,135

B 1,152

C 1,105

D 1,125

Answer: D

Explanation:
Selling price = Rs. 1035

Loss % = 8%

=> Cost price = $\frac{1035}{(100-8)} \times 100$

= $11.25 \times 100 = Rs.\ 1125$

=> Ans - (D)

Question 62

A cycle merchant allows 25% discount on the marked price of the cycles and still makes a profit of 20%. If he gains rs. 360 over the sale of one cycle, find the marked price of the cycle.

A 2,920

B 2,800

C 2,880

D 2,900

Answer: C

Explanation:
Let marked price of the article = Rs. $100x$

Discount % = 25%

=> Selling price = $100x - (\frac{25}{100} \times 100x)$

= $100x - 25x = Rs.\ 75x$

Profit % = 20%

=> Cost price = $\frac{75x}{(100+20)} \times 100$

--

$= \frac{75x}{6} \times 5 = Rs.\ 62.5x$

According to ques, => Profit = $75x - 62.5x = 360$

=> $x = \frac{360}{12.5} = 28.8$

∴ Marked price of the cycle = $100 \times 28.8 = Rs.\ 2880$

=> Ans - (C)

Question 63

If $2x = 3y = 4z$, find x: y: z,

A 3:4:6

B 6:4:3

C 4:3:2

D 2:3:4

Answer: B

Explanation:

Given : $2x = 3y = 4z$

=> $x = 2z$ and $y = \frac{4z}{3}$ ----------(i)

To find = $x : y : z = (2z) : (\frac{4z}{3}) : (z)$

Multiplying above equation by '3', we get :

$= 6 : 4 : 3$

=> Ans - (B)

Question 64

The ratio of the ages of A, B and C is 5 : 8 : 9. If the sum of the ages of A and C is 56 years, the age of B will be

A 12 years

B 23 years

C 21 years

D 32 years

Answer: D

Explanation:

Let the ages of A, B and C respectively be $5x, 8x$ and $9x$ years.

According to ques, => $5x + 9x = 56$

=> $x = \frac{56}{14} = 4$

∴ B's age = $8 \times 4 = 32$ years

=> Ans - (D)

Question 65

A box contain 280 coins of one rupee, 50 paise and 25 paise. The values of each kind of coin are in the ratio of 8 : 4 : 3. The number of one rupee coins will be

A 52

B 81

C 60

D 80

Answer: D

Explanation:

Ratio of number of coins = $(8 \times 1) : (4 \times 2) : (3 \times 4)$

= $8 : 8 : 12 = 2 : 2 : 3$

=> Number of one-rupee coin = $\frac{2}{(2+2+3)} \times 280$

= $2 \times 40 = 80$

=> Ans - (D)

Question 66

Length of each equal side of an isosceles triangle is 10 cm and the included angle between those two sides is 45°. Find the area of the triangle.

A $25\sqrt{2}$

B $35\sqrt{2}$

C $5\sqrt{2}$

D $15\sqrt{2}$

Answer: A

Explanation:

Area of isosceles triangle = $\frac{1}{2} \times (a)^2 \times sin(\theta)$, where a is one of the equal sides and θ is the angle between them.

=> Area = $\frac{1}{2} \times (10)^2 \times sin(45^\circ)$

= $50 \times \frac{1}{\sqrt{2}}$

= $25\sqrt{2}\ cm^2$

=> Ans - (A)

Question 67

Rita purchased a car with a marked price of rs. 2,10,000 at a discount of 5%. If the sales tax charged is 10%, find the amount she has to pay.

A 2,19,500

B 2,19,000

C 2,19,450

D 2,20,000

Answer: C

Explanation:
Marked price = Rs. 2,10,000

Discount % = 5%

=> Selling price = $2,10,000 - (\frac{5}{100} \times 2,10,000)$

= $2,10,000 - 10,500 = Rs.\ 1,99,500$

Sales tax = 10%

$\therefore$ Total amount to be paid = $1,99,500 + (\frac{10}{100} \times 1,99,500)$

= $1,99,500 + 19,950 = Rs.\ 2,19,450$

=> Ans - (C)

Question 68

A shopkeeper sold an item for Rs. 1,800 at a discount of 10% and gained Rs. 200. Had he not given the discount, his gain would be

A 300

B 400

C 180

D 200

Answer: B

Explanation:
Selling price = Rs. 1800

Profit = Rs. 200

=> Cost price = $1800 - 200 = Rs.\ 1600$

Discount % = 10%

=> Marked price = $\frac{1800}{(100-10)} \times 100$

= $20 \times 100 = Rs.\ 2,000$

If no discount is given, => Selling price = Rs. 2000

$\therefore$ Profit = $2000 - 1600 = Rs.\ 400$

=> Ans - (B)

Question 69

The sum of the squares of the digits of the largest prime number in two digits is

A 148

B 130

C 97

D 118

Answer: B

Explanation:
Largest 2-digit prime number = 97

Sum of the squares of the digits = $(9)^2 + (7)^2$

= $81 + 49 = 130$

=> Ans - (B)

Question 70

Find the number lying between 900 and 1000 which when divided by 38 and 57 leaves in each case a remainder 23.

A 912

B 926

C 935

D 962

Answer: C

Explanation:
L.C.M. (38,57) = 114

Now, multiple of 114 between 900 and 1000 = 912

Now, the number which leaves remainder 23 = $912 + 23 = 935$

=> Ans - (C)

Question 71

Raju can do a piece of work in 20 days, while Ram can do it in 30 days. If both of them work at it. together, then the number of days in which they will be able to finish the work is

A 12 days

B 10 days

C 50 days

D 25 days

Answer: A

Explanation:
Let total work is L.C.M. (20,30) = 60 units

Raju alone can complete the work in 20 days, => Raju's efficiency = $\frac{60}{20} = 3$ units/day

Similarly Ram's efficiency = $\frac{60}{30} = 2$ units/day

Now, (Raju+Ram)'s 1 day's work = $3 + 2 = 5$ units/day

$\therefore$ Days required by Raju and Ram together to complete the work = $\frac{60}{5} = 12$ days

=> Ans - (A)

Question 72

P is twice as good a workman as Q and together they finish a piece of work in 20 days. In how many days will P alone finish the work ?

A 30 days

B 25 days

C 40 days

D 35 days

Answer: A

Explanation:
Let Q's efficiency = x units/day

=> P's efficiency = $2x$ units/day

Together they finish the work in 20 days.

=> Total work = $20 \times (x + 2x) = 20 \times 3x = 60x$ units

$\therefore$ Days taken by P alone to finish the work = $\frac{60x}{2x} = 30$ days

=> Ans - (A)

Question 73

A spherical ball of lead of radius 14 cm is melted and recast into spheres of radius 2 cm. The number of the small spheres is

A 300

B 525

C 343

D 450

Answer: C

Explanation:
Radius of large spherical ball = $R = 14$ cm and radius of small spheres = $r = 2$ cm

=> Number of balls = Volume of large ball/Volume of small sphere = $\frac{\frac{4}{3}\pi R^3}{\frac{4}{3}\pi r^3}$

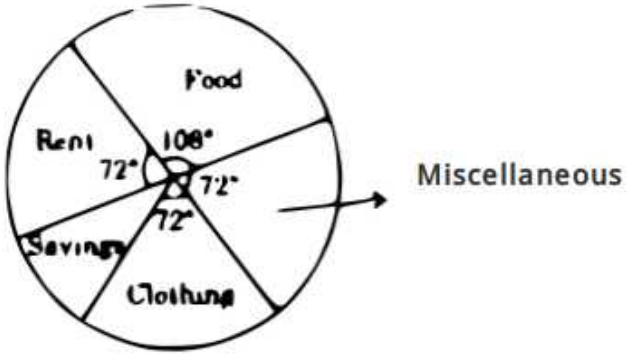
= $\frac{(14)^3}{(2)^3} = \left(\frac{14}{2}\right)^3$

= $(7)^3 = 343$

=> Ans - (C)

Question 74

Using the pic-chart answer the following :



If the annual income of the family is 60,000, then the savings is

A 7,500

B 9,000

C 3,000

D 6,000

Answer: D

Explanation:

Angle for savings = $360^\circ - (108^\circ + 72^\circ + 72^\circ + 72^\circ)$

= $360^\circ - 324^\circ = 36^\circ$

Annual income = Rs. 60,000

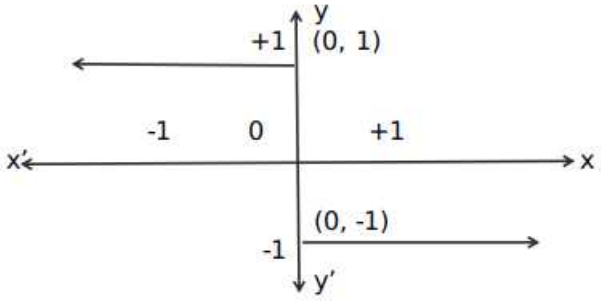
=> Savings = $\frac{36^\circ}{360^\circ} \times 60,000$

= $\frac{1}{10} \times 60,000 = Rs.\ 6,000$

=> Ans - (D)

Question 75

The equation of the graph shown here is



A When $x \leq 0, y = +1$
When $x > 0, y = -1$

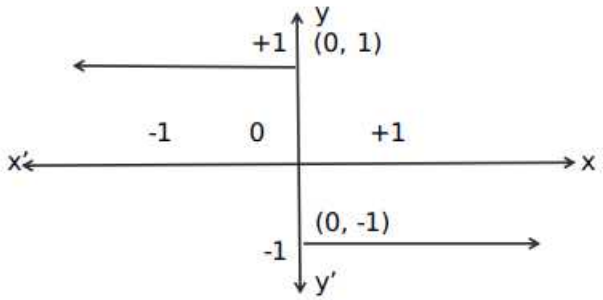
B When $x < 0, y = +1$
When $x \geq 0, y = -1$

C When $x < 0, y = +1$
When $x > 0, y = -1$

D When $x < 0, y = -1$
When $x > 0, y = +1$

Answer: A

Explanation:
From the graph,



When x is negative or zero, then $y = +1$

and when x is positive, then $y = -1$

Thus, it is concluded that : when $x \leq 0, y = +1$ and when $x > 0, y = -1$

=> Ans - (A)

General Awareness

Instructions
For the following questions answer them individually

Question 76

Image files can be sent along with the e-mail documents using

A Attachments

B Subject

C Signature

D CC & BCC

Answer: A

Question 77

The invention of_____led to the third generation of computers.

A Vacuum tubes

B Very Large Scale Integration (VLSI)

C Transistors

D Integrated chips

Answer: D

Question 78

Hydrogen bomb is based on the principle of

A Double decomposition

B Artificial radioactivity

C Nuclear fission

D Nuclear fusion

Answer: D

Question 79

The commonly used safety fuse-wire is made of

A an alloy of Nickel and Lead

B an alloy of Tin and Lead

C an alloy of Tin and Nickel

D an alloy of Lead and Iron

Answer: B

Question 80

At what temperature is the density of water the maximum ?

A 2°C

B 4°C

C 0°C

D 1°C

Answer: B

Question 81

The linear expansion of a solid rod is independent of its

A increase in temperature

B time of heat flow

C initial length

D material

Answer: B

Question 82

Cathode rays when obstructed by metal cause emission of

A $y-rays$

B $X-rays$

C $a-rays$

D $B-rays$

Answer: B

Question 83

In a____network, all devices are connected to a device called a hub and they communicate through it.

A Ming

B Bus

C Mesh

D Star

Answer: D

Question 84

Who is the father of biology ?

A Lamarck

B Robert Hooke

C Aristotle

D Pasteur

Answer: C

Question 85

The smallest unit of classification is

A Species

B Genus

C Family

D Order

Answer: A

Question 86

Arenchyma is present in

A Banana stem

B Palm stem

C Aquatic plants

D Xerophytic plants

Answer: C

Question 87

The deficiency of vitamin A causes

A Scurvy

B Night blindness

C Beri-Berl

D Dermatitis

Answer: B

Question 88

Clove is a

A Dried flower bud

B Flower

C Fruit

D Seed

Answer: A

Question 89

The recently discovered field with oil potential in Krishna-Godavari Basin is called

A Ravva Offshore Block

B Golkunda Block

C Bombay High

D Telangana Block

Answer: A

Question 90

Which of the following tribal groups are found in Manipur ?

A Kuki

B Mundas

C Bhils

D Khonds

Answer: A

Question 91

Consider the following sea-ports :
1. Chennai 2. Machilipatnam
3. Nagapattinam 4. Tuticorin
The correct sequence of these ports from north to south is

A 1,3,2,4

B 2,1,4,3

C 1,2,4,3

D 2,1,3,4

Answer: D

Question 92

Santa Cruz is

A an International airport in Chennai

B a Domestic airport in Chennai

C an International airport in Mumbai

D a Domestic airport in Mumbai

Answer: D

Question 93

What is the name given to Moon Mission in India?

A Vikram I

B Chandrayaan I

C Kalpana II

D Astrosat

Answer: B

Question 94

Lira was the currency of which country?

A China

B Australia

C Japan

D Italy

Answer: D

Question 95

On heating, Gypsum loses certain percentage of its water content and becomes

A Chalk

B Calcium sulphate

C Plaster of Paris

D a pearl

Answer: C

Question 96

Which one of the following is not an organ of the Government?

A Executive

B Legislative

C Sovereignty

D Judiciary

Answer: C

Question 97

The Almatti Dam is constructed on the river

A Tungabhadra

B Krishna

C Kaveri

D Sileru

Answer: B

Question 98

The name of the scientist who discovered neutron is

A Fermi

B Rutherford

C Chadwick

D Bohr

Answer: C

Question 99

The bubbles in Chanmpagne and Soda are

A Nitrogen

B Oxygen

C Carbon dioxide

D Hydrogen

Answer: C

Explanation:
because these drinks are carbonated water

Question 100

Nobel Peace Prize-2013 was awarded to

A Food and agriculture Organization of the United Nations

B Organization for Economic Cooperation and Development

C Organization for the Prohibition of Chemical Weapons

D World Health Organization of the United Nations

Answer: C