SSC GD

Reasoning

Instructions

For the following questions answer them individually

Question 1

How would the pattern given on the square transparent sheet marked 'X' look when the sheet is folded along the dotted line?

(X)

A

B

C

D
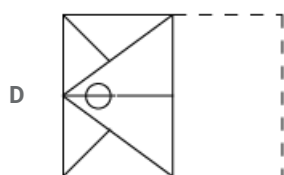
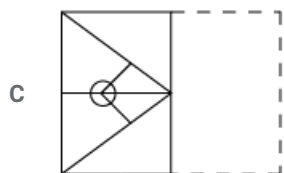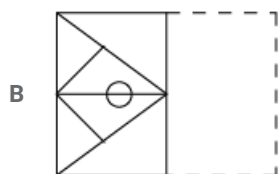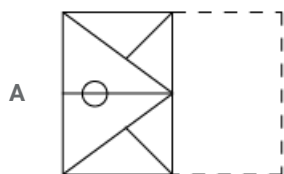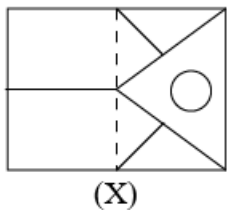**Answer:** A

Explanation:

When we fold the sheet along the dotted line, the resulting figure will be the mirror image of the original figure, thus the triangle originally pointing to the left will now point to the right, hence last option is eliminated.

As there is only a circle inside the triangle, thus in the answer figure there will only be a circle along the horizontal line (which is already present on the left side of X), thus only possible answer is the first one.

> Ans - (A)

Question 2

Four words have been given out of which three are alike in some manner, while one is different. Choose the odd one

A   Joy

B   Fear

C   Anger

D   Calm

   Answer: D

Explanation:
All the words except calm are emotions, hence **calm** is the odd one out.

   > Ans - (D)

Question 3

The statements below are followed by two conclusions labeled I and II. Assuming that the information in the statements is true, even if it appears to be at variance with generally established facts, decide which conclusion(s) logically and definitely follow(s) from the information given in the statements.
Statements:
1. Some flowers are white.
2. Some white objects are round.
Conclusions:
I. Some flowers are round.
II. Every round object is either white or a flower.

A   Only conclusion II follows

B   Both conclusions I and II follow

C   Only conclusion I follows

D   Neither conclusion I nor II follows

   Answer: D

Explanation:
The venn diagram for above statements is :
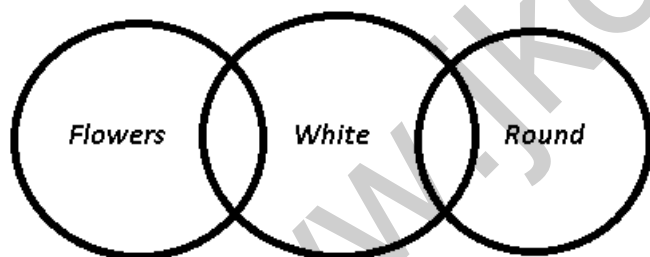
Conclusions:
I. Some flowers are round   false
II. Every round object is either white or a flower   false

Thus, neither conclusion I nor II follows.

   > Ans - (D)

Question 4

If in a code language, HEAD = 4158 and PASTE = 52019116, then TRICK = ?

A   11391820

B   31191820

C   11391718

D   11932018

Answer: A

Explanation:

If all the alphabets are numbered sequentially, i.e. A ≡ 1, B ≡ 2, C ≡ 3 and so on.

Then, HEAD ≡ 8514, and if reverse the number we get ⟹ 4158

Similar pattern is observed in PASTE ⟹ 52019116

∴. TRICK ≡ 20,18,9,3,11 and if we reverse it ⟹ 11391820

> Ans - (A)

Question 5

DAWN is related to DUSK in the same way as INAUGURATION is related to:

A MEETING

B VALEDICTION

C CONCLUSION

D INVITATION

Answer: B

Explanation:
Dawn is opposite of Dusk, similarly antonym of Inauguration is Valediction.

> Ans - (B)

Question 6

Six houses A, B, C, D, E and F are located in two rows facing each other with three houses in each row. F is opposite C, which is to the left of E. D is to the right of A. Which house is facing B?

A D

B A

C C

D E

Answer: B

Explanation:
House C is to the left of E and F is opposite of C.
This means that FDA are in same row and BCE are in another row.

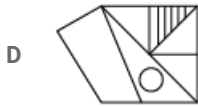D is to the right of A, i.e. F is at one of the ends. Thus pattern is :

F	D	A
C	E	B

> **House A** is facing B.

> Ans - (B)

Question 7

Select the correct mirror image of the following figure when the mirror is placed to its right.

A

B

C

D
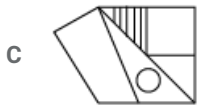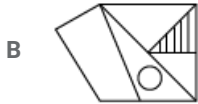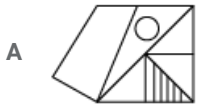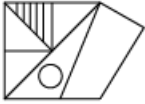
Answer: D

Explanation:

When a vertical mirror is placed, object on the left will appear on the right inversed, and vice-versa. So, the trapezium on the right will appear on the left, but the longer un parallel side will remain on the top, thus first option is eliminated.

Similarly, the square at top left will still have vertical lines inside it, but will now appear at top right, as shown in the last image.

 > Ans - (D)

Question 8

Select the correct option that will fill in the blank and complete the series.
2, 3, 4, 8, 16, 25, 52, ...

A   114

B   85

C   68

D   79

Answer: C

Explanation:
The pattern followed is :

$2 + (1)^2$ 3

$3 + (1)^3$ 4

$4 + (2)^2$ 8

$8 + (2)^3$ 16

$16 + (3)^2$ 25

$25 + (3)^3$ 52

$52 + (4)^2$ **68**

> Ans - (C)

Question 9

Choose the figure from the options that would follow next in the given series.

A

B

C

D
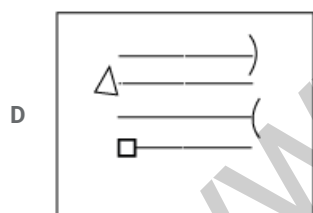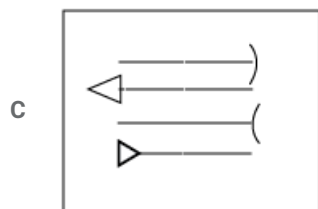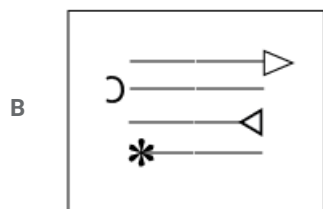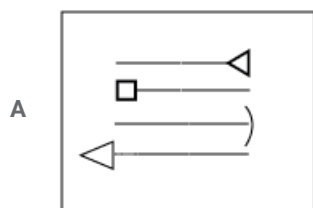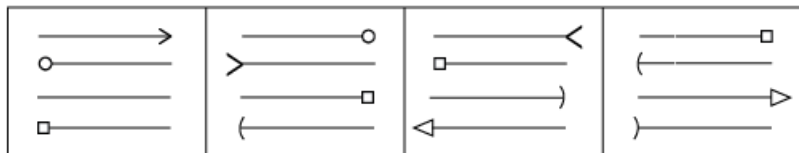
Answer: C

Question 10

Select the option that is related to the third term in the same way as the second term is related to the first term.
BDFH : AFCL :: FHJL : ?

A EIGP

B EJFO

C HFGN

D EJGP

Answer: D

Explanation:

Expression   BDFH : AFCL :: FHJL : ?

The pattern followed is :

B	D	F	H
(-1)	(+2)	(-3)	(+4)
A	F	C	L

Similarly, FHJL : **EJGP**

F	H	J	L
(-1)	(+2)	(-3)	(+4)
E	J	G	P

 > Ans - (D)

Question 11

**Which of the following Venn diagrams correctly represents the relationships among the classes:
Educated, Mothers, Employed**

A

B

C

D
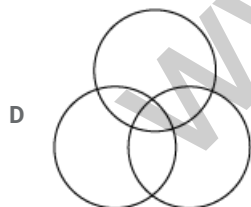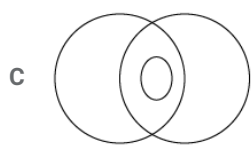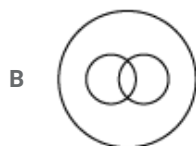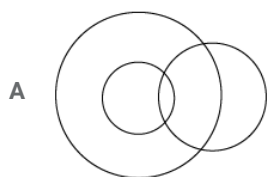
Answer: D

Explanation:

A mother can be both educated or employed, an educated person can be either employed or a mother and vice versa, hence the venn diagram that best describes above relationship is :
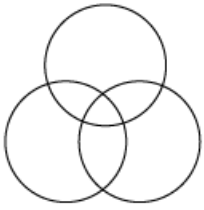
> Ans - (D)

Question 12

Four numbers have been given out of which three are alike in some manner, while one is different. Choose the odd one.

A   84

B   91

C   42

D   55

  Answer: D

Explanation:

Apart from **55**, all other numbers are multiples of 7, hence it is the odd one.

  > Ans - (D)

Question 13

If in a code language SYMPHONY is coded as ZOPIQNZT, then THURSDAY would be coded as:

A   UIVSTEBZ

B   ZBETSIVU

C   XZCRQTGS

D   ZBETSVIU

  Answer: D

Explanation:

SYMPHONY is coded as ZOPIQNZT

The pattern followed is each letter is replaced by its succeeding alphabet, and the code is **reversed** in the end.

S	Y	M	P	H	O	N	Y
(+1)	(+1)	(+1)	(+1)	(+1)	(+1)	(+1)	(+1)
T	Z	N	Q	I	P	O	Z
Z	O	P	I	Q	N	Z	T

Similarly, for THURSDAY : **ZBETSVIU**

T	H	U	R	S	D	A	Y
(+1)	(+1)	(+1)	(+1)	(+1)	(+1)	(+1)	(+1)
U	I	V	S	T	E	B	Z
Z	B	E	T	S	V	I	U

> Ans - (D)

Question 14

Select the correct option that will fill in the blank and complete the series.
2, 5, 7, 12, ?, 31, 50

A 18

B 19

C 25

D 21

   Answer: B

Explanation:
The above series is an example of fibonacci series, where the next term is the sum of previous 2 terms.

2 + 5   7

5 + 7   12

7 + 12   **19**

12 + 19   31

19 + 31   50

  > Ans - (B)

Question 15

The statements below are followed by two conclusions labeled I and II. Assuming that the information in the statements is true, even if it appears to be at variance with generally established facts, decide which conclusion(s) logically and definitely follow(s) from the information given in the statements.
Statements:
1. Some mangoes are fruits.
2. All fruits are sweet.
Conclusions:
I. Some sweet objects are mangoes.
II. All sweet objects are fruits.
III. Some mangoes are neither fruits nor sweet.

A Only conclusions I and III follow

B Only conelusions II and III follow

C Only conclusions I and II follow

D Only conclusion I follows

   Answer: A

Explanation:
The venn diagram for above statements is :
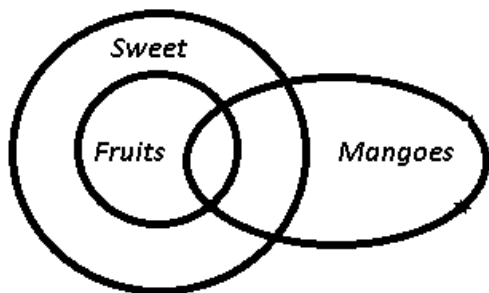
Conclusions:

I. Some sweet objects are mangoes   true
II. All sweet objects are fruits   false
III. Some mangoes are neither fruits nor sweet   true

Thus, only conclusions I and III follow.

 > Ans - (A)

Question 16

Select the option thatis related to the third term in the same way as the second term is related to the first term.
Torture : Cruelty :: Forgiveness : ?

A   Politeness

B   Generosity

C   Gratitude

D   Excuse

   Answer: B

Explanation:

Expression   Torture : Cruelty :: Forgiveness : ?

Torture and cruelty have similar meanings, hence synonym of forgiveness is **gratitude.**

 > Ans - (B)

Question 17

Choose the figure from the options in which the figure marked 'X' is embedded.

(X)

A

B

C

D
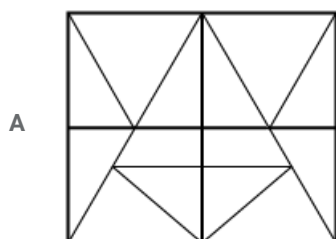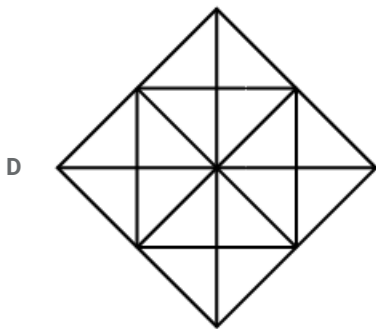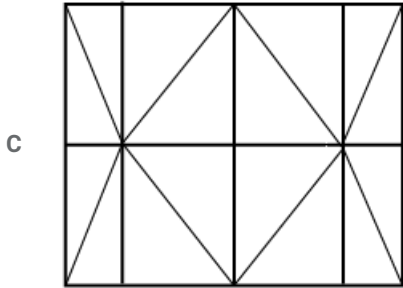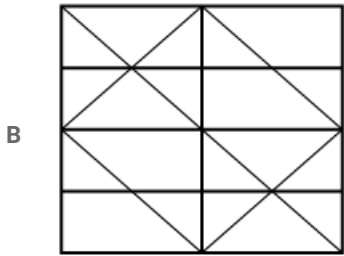
Answer: C

Explanation:
The question figure is embedded in following figure and is represented by red colour.
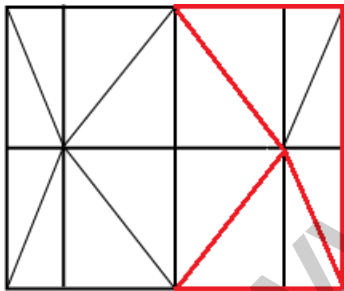
> Ans - (C)

Question 18

Pick the odd pair out.

A   14-41

B   17-52

C   23-32

D   12-21

Answer: B

Explanation:
In all the pairs except **17-52**, the digits of the first number are reversed to form the second number, hence it is the odd one.

> Ans - (B)

Question 19

V, X, Y and Z are playing cards. X is to the left of Y and V is to the right of Z. If X is facing West, which direction is V facing?

A   North

B   South

C   West

D   East

   Answer: A

Explanation:

V, X, Y and Z are playing cards, assuming each facing one of the four directions.

X is to the left of Y and X is facing West,   > Y is facing south.
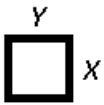
V is to the right of Z,   > V sits opposite Y.
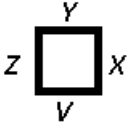
∴ V is facing **North**.

   > Ans - (A)

Question 20

Which two signs should be interchanged to make the following equation correct?
$12 + 16 \div 8 \times 4 - 8 = 24$

A $-$ and $\div$

B $\times$ and $-$

C $\div$ and $\times$

D $+$ and $\times$

   Answer: A

Explanation:
Expression : $12 + 16 \div 8 \times 4 - 8 = 24$

(A) : $-$ and $\div$

L.H.S. $\equiv 12 + 16 - 8 \times 4 \div 8$

   $28 - 4 = 24 =$ R.H.S.

   > Ans - (A)

Question 21

Which one of the following four-letter clusters does NOT belong to the group?

A CXWD

B FUSG

C DWTG

D BYWD

   Answer: B

Explanation:

The pattern followed is that there are 2 pairs of symmetrically opposite alphabets in each term.

Eg :- A and Z, B and Y, C and X, D and W and so on.

But in the second option, (FU) and (SG) does not belong to that series, hence it is the odd one.

 > Ans - (B)

Question 22

Select the correct option that will fill in the blank and complete the series.
cab, gef, ljk, rpq, ...

A ywx

B yxw

C zxy

D wvu

   Answer: A

Explanation:
Expression : cab, gef, ljk, rpq, ...

The pattern followed in each letter of the terms is :

1st letter : c (+4 letters)   g (+5 letters)   l (+6 letters)   r (+7 letters)   **y**

2nd letter : a (+4 letters)   e (+5 letters)   j (+6 letters)   p (+7 letters)   **w**

3rd letter : b (+4 letters)   f (+5 letters)   k (+6 letters)   q (+7 letters)   **x**

Thus, missing term   **ywx**

 > Ans - (A)

Question 23

Select the figure which when placed in the blank space of the figure marked 'X' would complete the pattern.

(X)

A

B

C

D
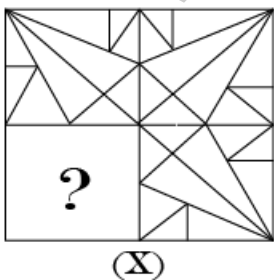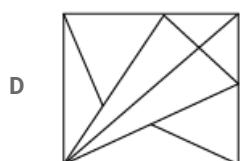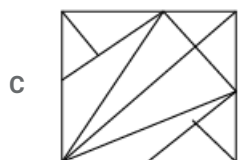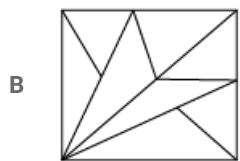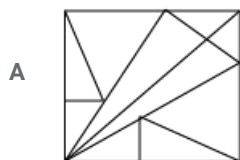
Answer: A

Explanation:

f we complete the above figure, then the missing pattern is represented by the red colour.
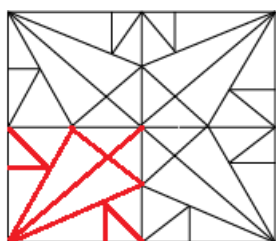
> Ans - (A)

Question 24

Among six objects P, Q, R, S, T and U, Q is heavier than R but lighter than T. S is lighter than T but heavier than U.P is lighter than Q but heavier than S. Which is the second heaviest object?

A Q

B T

C P

D S

Answer: A

Explanation:

Q is heavier than R but lighter than T,   T > Q > R

S is lighter than T but heavier than U,   T > S > U

 is lighter than Q but heavier than S,   Q > P > S

 hus, final arrangement : **T > Q > R, P > S > U**

   Q is the second heaviest.

> Ans - (A)

Question 25

The numbers in the following set are related in a certain way. Choose the set that is similar to the following set: {6, 10, 8}

A   {8, 12, 9}

B   {5, 13, 12}

C   {13, 17, 16}

D   {3, 6, 4}

   Answer: B

Explanation:
The numbers in the set {6, 10, 8} are sides of right angled triangle, the middle number being the hypotenuse.

$$(6)^2 + (8)^2 = (10)^2$$

Similarly, only in the set {5, 13, 12}, $> (5)^2 + (12)^2 = (13)^2$, the numbers represent sides of right angled triangle.

> Ans - (B)

General knowledge

Instructions
For the following questions answer them individually

Question 26

The famous playback singer .... is a recipient of the Bharat Ratna Award.

A   Shubha Mudgal

B   Asha Bhonsale

C   Shreya Ghoshal

D   Lata Mangeshkar

   Answer: D

Question 27

Which day is celebrated as the World Environment Day?

A 5th June

B 1st December

C 5th August

D 1st May

   Answer: A

Question 28

Who is an 'indentured labourer'?

A　A slave from Africa

B　A labour bought in a market

C　An unpaid labourer

D　A bonded labourer, working to pay off his passage to a new country

　Answer: D

Question 29

.... is known as the Eastern Mountain Range.

A　Patkai Range

B　Aravalli

C　Karakoram

D　Shivalik

　Answer: A

Question 30

What do banks utilize a major portion of the deposits for?

A　Loans

B　Guarantee

C　Interest

D　Collaterals

　Answer: A

Question 31

In the context of Indian National Movement, who was known as 'Frontier Gandhi'?

A　Maghfoor Ahmad Ajazi

B　Khan Abdul Gaffar Khan

C　Udham Singh

D　Ashfaquila Khan

　Answer: B

Question 32

What is diluted acetic acid commonly known as?

A Oleum

B Blue vitriol

C Vinegar

D Alum

   Answer: C

Question 33

The slogan "Workers of the world unite" was associated to:

A French revolution

B American revolution

C Russian revolution

D Japanese revolution

   Answer: C

Question 34

The ICC Emerging Player of the Year 2018 was awarded to ....

A Hardik Pandya

B K.L. Rahul

C Rishabh Pant

D Shikhar Dhawan

   Answer: C

Question 35

The first amendment to the Indian Constitution was made in ....

A 1947

B 1948

C 1951

D 1950

   Answer: C

Question 36

Which type of micro-organism causes typhoid?

A   Virus

B   Bacteria

C   Fungi

D   Protozoa

   Answer: B

Question 37

The Constitution of India contains .... schedules.

A   11

B   12

C   14

D   13

   Answer: B

Question 38

Whena force resists the relative motion between two surfaces, it is called ....

A   Resistance

B   Convection

C   Friction

D   Induction

   Answer: C

Question 39

What is the movement of a plant due to the stimulus of light known as?

A   Respiration

B   Geotaxis

C   Geotropism

D   Phototropism

   Answer: D

Question 40

Malgudi Days was written by ....

A   Shashi Tharoor

B   Vikram Seth

C Amish Tripathi

D R.K. Narayan

Answer: D

Question 41

Who won the National Squash 2018 Womens Singles title?

A Dipika Pallikal

B Bhuvaneshkumari

C Urwashi Joshi

D Joshna Chinappa

Answer: D

Question 42

River Yamuna does NOT pass through which of the following states?

A Uttarakhand

B Haryana

C Gujarat

D Uttar Pradesh

Answer: C

Question 43

What is an annual statement of receipts and expenditure of the government overa fiscal year is known as?

A Capital

B Revenue

C Tax

D Budget

Answer: D

Question 44

Which of the following pair correctly represents a state and the corresponding art form associated with it?

A Assam — Kathakali

B Tamil Nadu — Odissi

C Uttar Pradesh — Kathak

D Punjab — Mohiniyattam

Answer: C

Question 45

Which one of the following is a labour intensive industry?

A Pulses

B Tea

C Maize

D Wheat

   Answer: B

Question 46

Under which of the following situations, the Fundamental Right to Freedom is curtailed in India?

A Financial Emergency

B Epidemic Emergency

C State Emergency

D National Emergency

   Answer: D

Question 47

Nalanda was an ancient centre of learning for which religion?

A Islam

B Christianity

C Jainism

D Buddhism

   Answer: D

Question 48

Which of the following statement is NOTcorrect in the context of rising importance of tertiary sector in India?

A Growth of information and technology

B Growth in per capita income

C Growth of service providing industries

D Growth of political awareness in rural areas

   Answer: D

Question 49

Ustad Amjad Ali Khan is famousfor playing the ....

A tabla

B violin

C veena

D sarod

   Answer: D

Question 50

RK Laxman is famous for ....

A wall painting

B classical music

C films

D cartoons

   Answer: D

Quant

Instructions
For the following questions answer them individually

Question 51

When a person goes to his office from his house with a speed of 10 km/hr, he is late by 20 minutes. When he goes with speed of 15 km/hr, he is late by 5 minutes. What is the distance (in km) between his office and house?

A 8

B 7.5

C 7

D 8.5

   Answer: B

Explanation:

Let ideal time taken be t hours

Since, speed is inversely proportional to time,

$> \dfrac{10}{15} = \dfrac{t + \frac{5}{60}}{t + \frac{20}{60}}$

$> 10t + \dfrac{10}{3} = 15t + \dfrac{5}{4}$

$> 5t = \dfrac{10}{3} - \dfrac{5}{4}$

$> 5t = \dfrac{40 - 15}{12} = \dfrac{25}{12}$

$> t = \frac{5}{12}$ hours

$\therefore$ Distance   speed $\times$ time

$10 \times \left(\frac{5}{12} + \frac{20}{60}\right)$

$10 \times \frac{45}{60} = 7.5$ km

> Ans - (B)

Question 52

The value of: $\left[\frac{5}{7} of 1\frac{3}{8} - \frac{5}{8} of \frac{6}{7}\right] \div \left[1 - \frac{1}{7} \times \left(\frac{5}{12} + \frac{1}{3}\right)\right] \times \frac{1\frac{7}{7}}{7} \frac{1\frac{9}{1}}{9}$

A $\frac{1}{4}$

B 8

C 4

D $\frac{1}{16}$

Answer: D

Explanation:

Expression : $\left[\frac{5}{7} of 1\frac{3}{8} - \frac{5}{8} of \frac{6}{7}\right] \div \left[1 - \frac{1}{7} \times \left(\frac{5}{12} + \frac{1}{3}\right)\right] \times \frac{1\frac{7}{7}}{7} \frac{1\frac{9}{1}}{9}$

$\left[\frac{55}{56} - \frac{30}{56}\right] \div \left[1 - \frac{1}{7} \times \left(\frac{27}{36}\right)\right] \times \frac{2}{16}$

$\frac{25}{56} \div \left[1 - \frac{3}{28}\right] \times \frac{2}{16}$

$\frac{25}{56} \times \frac{28}{25} \times \frac{2}{16} = \frac{1}{16}$

> Ans - (D)

Question 53

What is the sum of digits of the least number which when divided by 21, 28, 30 and 35 leaves the same remainder 10 in each case but is divisible by 17?

A 11

B 13

C 14

D 10

Answer: B

Explanation:

L.C.M. (21,28,30,35)   420

Least number that will leave remainder 10 will be of the form $420n + 10$

Now, if $n = 1$, number   430, which is not divisible by 17

But, when $n = 2$, number   850, which is divisible by 17

Thus, sum of digits of number 850 $8 + 5 + 0 = 13$

> Ans - (B)

Question 54

A park is in the shape of a rectangle. Its length and breadth 240 m and 100 m, respectively. At the centre of the park, there is a circular lawn. The area of the park, excluding the lawn is 3904 m^2. What is the perimeter (in m) of the lawn? (use $\pi = 3.14$)

A   502.4

B   516.2

C   508.6

D   512.8

   Answer: A

Explanation:

Area of whole park $240 \times 100 = 24000 \, m^2$

Area of the lawn $24000 - 3904 = 20096 \, m^2$

Let radius of lawn r m

> $\pi r^2 = 20096$

> $3.14 \times (r)^2 = 20096$

> $r^2 = \frac{20096}{3.14} = 6400$

> $r = \sqrt{6400} = 80$

$\therefore$ Perimeter of lawn $2\pi r$

$2 \times 3.14 \times 80 = 502.4$ m

> Ans - (A)

Question 55

The value of:
$1.25 - [1 \div \{3 + (2 - 0.4 \times 2.5)\}]$

A   2

B   1

C   0

D $\frac{1}{2}$

   Answer: B

Explanation:

Expression $1.25 - [1 \div \{3 + (2 - 0.4 \times 2.5)\}]$

$1.25 - [1 \div \{3 + (2 - 1)\}]$

$1.25 - [1 \div (4)]$

$1.25 - 0.25 = 1$

> Ans - (B)

Question 56

The profit on selling 35 mangoes is equal to the cost price of 7 mangoes. What is the profit percentage?

A $33\frac{1}{3}$

B 20

C 25

D $16\frac{2}{3}$

   Answer: B

Explanation:

Let cost price of 1 mango   Rs. x and selling price   Rs. y

 > Profit on selling 35 mangoes   Rs. $35(y-x)$

According to ques,

 > $35(y-x) = 7x$

 > $35y = 7x + 35x = 42x$

 > $\frac{x}{y} = \frac{35}{42} = \frac{5}{6}$

Let $x = 5$ and $y = 6$

∴ Profit % $\frac{(y-x)}{x} \times 100$

  $\frac{6-5}{5} \times 100 = 20\%$

 > Ans - (B)

Question 57

A train takes 3 hours less time for a journey of 360 km, if its speed is increased by 10 km/hr from its usual speed. What is its increased speed (in km/hr)?

A 40

B 42

C 36

D 30

   Answer: A

Explanation:

Let usual speed x km/hr and new speed $(x+10)$ km/hr

Usual time taken $\frac{360}{x}$ and new time $\frac{360}{x+10}$ -----------(i)

Also, new time $\frac{360}{x} - 3$ ----------(ii)

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

 > $\frac{360}{x} - 3 = \frac{360}{x+10}$

 > $\frac{360 - 3x}{x} = \frac{360}{x+10}$

 > $360x + 3600 - 3x^2 - 30x = 360x$

 > $3x^2 + 30x - 3600 = 0$

 > $x^2 + 10x - 1200 = 0$

 > $x^2 + 40x - 30x - 1200 = 0$

 > $(x+40)(x-30) = 0$

> $x = -40, 30$

∵ Speed cannot be negative, > $x \neq -40$

∴ Increase speed $(x + 10) = 30 + 10 = 40$ km/hr

> Ans - (A)

Question 58

After allowing a discount of $12\frac{1}{2}\%$ on the marked price of an article. it was sold for ₹700. Had the discount NOT been given, the profit would have been 60%.The cost price of the article is:

A   ₹500

B   ₹540

C   ₹600

D   ₹480

Answer: A

Explanation:

Selling price after 12.5% discount   700

> Marked price $\frac{700}{87.5} \times 100 = Rs.\ 800$

If no discount is given, then selling price   marked price   Rs. 800

> Cost price after 60% profit $\frac{800}{160} \times 100 = Rs.\ 500$

> Ans - (A)

Question 59

If (x + 4), (x + 12), (x - 1), and (x + 5) are in proportion then the mean proportional between x and (x - 7)is:

A   9

B   16

C   15

D   12

Answer: D

Explanation:

If (x + 4), (x + 12), (x - 1), and (x + 5) are in proportion

> $\frac{x+4}{x+12} = \frac{x-1}{x+5}$

> $(x + 4)(x + 5) = (x - 1)(x + 12)$

> $x^2 + 9x + 20 = x^2 + 11x - 12$

> $2x = 20 + 12 = 32$

> $x = \frac{32}{2} = 16$

Now, mean proportional of x and $(x - 7)$

$\sqrt{16 \times 9} = \sqrt{144} = 12$

> Ans - (D)

Question 60

Three positive number are given.If the average of any two of them is added to the third number, the sums obtained are 172, 216 and 180. What is the average of the given three numbers?

A   93

B $95\frac{1}{3}$

C $94\frac{2}{3}$

D   96

Answer: C

Explanation:

Let the three numbers be x, y, z

According to ques, $> (\frac{x\ y}{2}) + z = 172$ ------------(i)

$(\frac{y\ z}{2}) + x = 216$ ----------(ii)

$(\frac{z\ x}{2}) + y = 180$ ------------(iii)

Adding all the equations, we get : $(\frac{2(x\ y\ z)}{2}) + (x + y + z) = 172 + 216 + 180$

$> 2(x + y + z) = 568$

Dividing both equations by 3, $> \frac{(x\ y\ z)}{3} = \frac{284}{3} = 94\frac{2}{3}$

$>$ Ans - (C)

Question 61

The selling price of an article is 84% of its cost price. If the cost price is increased by 20% and the selling price is increased by 25%, what is the percentage increase/decrease in the loss with respect to the earlier loss?

A $6\frac{1}{4}$%, decrease

B $6\frac{2}{3}$%, decrease

C $6\frac{1}{4}$%, increase

D $6\frac{2}{3}$%, increase

Answer: A

Explanation:

Let cost price, C   Rs. 100, thus selling price, S   Rs. 84

$>$ Original loss   Rs. 16

New cost price after 20% increase $C' = 100 \times \frac{120}{100} = Rs.\ 120$

Similarly, new selling price $S' = 84 \times \frac{125}{100} = Rs.\ 105$

$>$ New loss   Rs. 15

$\therefore$ **Decrease** in loss $\frac{(16\ 15)}{16} \times 100$

$\frac{25}{4} = 6\frac{1}{4}$%

> Ans - (A)

Question 62

2 men and 7 women can do a piece of work in 14 days whereas 3 men and 8 women can do it in 11 days. In how many days 5 men and 4 women can do the same work?

A   11

B   12

C   14

D   10

  Answer: A

Explanation:

2 men and 7 women can do a piece of work in 14 days

> $2m + 7w = \frac{1}{14}$ -------------(i) $\times 3$

Also, $3m + 8w = \frac{1}{11}$ -----------(ii) $\times 2$

Solving above equations, we get : $5w = \frac{3}{14} - \frac{2}{11}$

> $5w = \frac{33 \quad 28}{154}$

> $w = \frac{1}{154}$

Thus, $2m = \frac{1}{14} - \frac{7}{154}$

> $2m = \frac{22 \quad 14}{308}$

> $m = \frac{2}{154}$

Thus, 5 men and 4 women can do the same work in $\left(5 \times \frac{2}{154}\right) + \left(4 \times \frac{1}{154}\right)$

$\frac{14}{154} = \frac{1}{11}$

∴ Time taken is **11 days**

> Ans - (A)

Question 63

A metallic sphere of radius 4 cm is melted and the cast into small spherical balls, each of diameter 0.4 cm. The number of small balls will be:

A   1000

B   8000

C   4000

D   2000

  Answer: B

Explanation:

Volume of sphere $\frac{4}{3}\pi r^3$

Let n small balls will be formed, thus

> $n \times \frac{4}{3}\pi r^3 = \frac{4}{3}\pi R^3$

> $n \times (0.2)^3 = (4)^3$

$> n = \frac{64}{8} \times 1000 = 8000$

> Ans - (B)

Question 64

A sum of ₹14460 is divided among A, B, C and D such that the ratio of share of A and B is 3 : 5, that of B and C is 6 : 7 and that of C and D is 14 : 15. What is the difference between the shares of A and C?

A   ₹1440

B   ₹1500

C   ₹2100

D   ₹2040

   Answer: D

Explanation:

A : B = 3 : 5 , B : C = 6 : 7 , C : D = 14 : 15

Multiplying (1), (2) and (3) by 12,10 and 5 respectively, we get :

 > A : B : C : D = 36 : 60 : 70 : 75

Difference between share of A and C = $\frac{(70-36)}{(36+60+70+75)} \times 14460$

$\frac{34}{241} \times 14460 = Rs. 2040$

> Ans - (D)

Question 65

A pipe can fill a tank in 10 minutes while another pipe can empty it in 12 minutes. If the pipes are opened alternately each for 1 minute, beginning with the first pipe, the tank will be full after (in minutes):

A   90

B   109

C   108

D   120

   Answer: B

Explanation:

Let capacity of tank be L.C.M.(10,12) = 60 litres

First pipe can fill it in 10 minutes, > A's efficiency = $\frac{60}{10} = 6$ litres/min

Similarly, B's efficiency = $\frac{60}{12} = -5$ litres/min

If opened alternately for 1 minute each, tank filled will be $(6) + (-5) = 1$ litre in 2 minutes

Now, after 108 minutes, > 54 litres of the tank will be filled, and it will be of A's turn which will fill the remaining litres in the next minute.

Thus, total time taken is **109 minutes.**

> Ans - (B)

Question 66

Renu saves 30% of her income. If her savings increases by 30% and the expenditure increases by 25%, then the percentage increase in her income is:

A 30

B 25.8

C 26.5

D 15

   Answer: C

Explanation:

Let her income be Rs. $100x$

 > Savings   Rs. $30x$ and expenditure   Rs. $70x$

Now, new savings after 30% increase $30x \times \dfrac{130}{100} = Rs.\,39x$

New expenditure $70x \times \dfrac{125}{100} = Rs.\,87.5x$

 > New income $39x + 87.5x = Rs.\,126.5x$

∴ % increase in income $\dfrac{126.5x - 100x}{100x} \times 100 = 26.5\%$

 > Ans - (C)

Question 67

Study the following table and answer questions:
Number of employees working in five different companies.

Company	No of Employees	Ratio of Males & Females
A	380	13:06
B	420	4:03
C	360	8:07
D	320	11:09
E	280	3:05

The ratio of the number of male employees in company C to the number of female employees in the company D is:

A 3 : 2

B 5 : 2

C 4 : 3

D 8 : 9

   Answer: C

Explanation:

Male employees in company C $\dfrac{8}{15} \times 360 = 192$

Female employees in company D $\dfrac{9}{20} \times 320 = 144$

> Required ratio $\frac{192}{144} = 4 : 3$

> Ans - (C)

Question 68

The compound interest on a sum of ₹15625 for $2\frac{3}{4}$ years at 16% per annum, the interest compound annually is :

A   ₹6661

B   ₹5400

C   ₹7932

D   ₹7923

Answer: D

Explanation:

Principal sum P Rs. 15,625

Rate of interest $r = 16\%$ and time period $t = 2\frac{3}{4}$ years

Amount when compounded annually (time in fraction) $P \times (1 + \frac{r}{100})^t \times (1 + \frac{\frac{3}{4}r}{100})$ {∵ time in mixed fraction is $\frac{3}{4}$}

$15,625 \times (1 + \frac{16}{100})^2 \times (1 + \frac{3 \times 16}{400})$

$15,625 \times (\frac{841}{625}) \times (\frac{28}{25})$

$25 \times 841 \times \frac{28}{25} = 23,548$

∴ Compound interest $23548 - 15625 = 7923$

> Ans - (D)

Question 69

A and B are two cones. The curved surface area of A is twice that of B. The slant height of B is twice that of A. What is the ratio of radii of A to B?

A   3:2

B   1:4

C   4:1

D   2:1

Answer: C

Explanation:

Let radii of A and B be r_1 and r_2 units respectively.

Let slant height of A l units and of B $2l$ units

According to ques, ratio of curved surface are of A and B   2:1

> $\frac{\pi r_1 l}{\pi r_2 \times 2l} = \frac{2}{1}$

> $\frac{r_1}{r_2} = \frac{4}{1}$

> Ans - (C)

Question 70

Study the following table and answer questions:
Number of employees working in five different companies.

Company	No of Employees	Ratio of Males & Females
A	380	13:06
B	420	4:03
C	360	8:07
D	320	11:09
E	280	3:05

The number of female employees in company C is what percent more than the number of male employees in company E?

A   55

B   60

C   48

D   54

   Answer: B

Explanation:
Female employees in company C $\frac{7}{15} \times 360 = 168$

Male employees in company E $\frac{3}{8} \times 280 = 105$

> Required % $\frac{168 - 105}{105} \times 100$

> $\frac{6300}{105} = 60\%$

> Ans - (B)

Question 71

Two numbers are in the ratio 3 : 5. If 9 is subtracted from each, the numbers so obtained are in the ratio 12 : 23. If 3 is added to the smaller number and 7 is subtracted from the other number, then they will be in the ratio:

A   5 : 6

B   4 : 5

C   3 : 4

D   5 : 8

   Answer: C

Explanation:
Let the numbers be $3x$ and $5x$ respectively.

According to ques,

> $\frac{3x - 9}{5x - 9} = \frac{12}{23}$

> $69x - 207 = 60x - 108$

> $9x = 207 - 108 = 99$

> $x = 11$

∴ Numbers are 33 and 55

Thus, final ratio $\frac{33}{55} \times \frac{3}{7} = \frac{36}{48} = 3 : 4$

> Ans - (C)

Question 72

Study the following table and answer questions:
Number of employees working in five different companies.

Company	No of Employees	Ratio of Males & Females
A	380	13:06
B	420	4:03
C	360	8:07
D	320	11:09
E	280	3:05

What percent of total male employees in companies A and B is the number of female employees in E?

A 35

B 36

C 30

D 32

   Answer: A

Explanation:

Male employees in company A $\frac{3}{19} \times 380 = 260$

Male employees in company B $\frac{4}{7} \times 420 = 240$

Female employees in company E $\frac{5}{8} \times 280 = 175$

> Required % $\frac{175}{500} \times 100 = 35\%$

> Ans - (A)

Question 73

What is the mean of the range, median and mode of the data given below?
1, 2, 5, 9, 6, 3, 9, 7, 4, 3, 9, 1, 9, 6, 8, 1

A $7\frac{1}{2}$

B 8

C $8\frac{1}{2}$

D 7

   Answer: A

Explanation:

Data in ascending order : 1, 1, 1, 2, 3, 3, 4, 5, 6, 6, 7, 8, 9, 9, 9, 9

Now, range   highest - lowest $9 - 1 = 8$

Median $\frac{5\ 6}{2} = 5.5$

Mode   9

> Mean of the 3 terms $\frac{8\ \ 5.5\ \ 9}{3} = 7.5 = 7\frac{1}{2}$

> Ans - (A)

Question 74

The simple interest on a certain sum at 14% per annum for $3\frac{1}{4}$ years is ₹3731. What will the amount of the same sum for $5\frac{1}{2}$ years at half the earlier rate?

A   ₹11931

B   ₹11913

C   ₹11537

D   ₹11357

Answer: D

Explanation:

Let the principal sum be Rs. P

Rate of interest $r = 14\%$ and time period $t = \frac{13}{4}$ years

Simple interest $\frac{P \times r \times t}{100}$

> $\frac{P \times 14 \times 13}{4 \times 100} = 3731$

> $P = 3731 \times 200 \times \frac{1}{91} = Rs.\ 8200$

Now, amount after $\frac{11}{2}$ years and at 7%

$8200 + \left(\frac{8200 \times 7 \times 11}{2 \times 100}\right)$

$8200 + 3157 = Rs.\ 11357$

> Ans - (D)

Question 75

The average height of a certain number of persons in a group is 155.5 cm. Later on 4 persons of height 154.6 cm, 158.4 cm, 152.2 cm and 153.8 cm leave the group. As a result the average height of the remaining persons increases by 0.15 cm. What was the number of persons initially in the group?

A   18

B   20

C   22

D   24

Answer: D

Explanation:

Let the number of persons initially be x

> Total height initially $155.5x$ cm

Height of the 4 people that left $154.6 + 158.4 + 152.2 + 153.8 = 619$ cm

According to ques, new average :

$$> \frac{155.5x \ 619}{x \ 4} = 155.65$$

$$> 155.5x - 619 = 155.65x - 622.6$$

$$> 0.15x = 3.6$$

$$> x = \frac{360}{15} = 24$$

$\therefore$ There were **24 persons** initially.

> Ans - (D)

English

Instructions

For the following questions answer them individually

Question 76

From the given options, identify the segment in the sentence which contains the grammatical error.
Had you told me that you were in Mumbai I could have certainly contacted you instead of waiting here.

A you were

B Had you

C could have

D instead of

Answer: C

Question 77

Select the correctly spelt word.

A Contemparary

B Contemporary

C Comtemporary

D Contempory

Answer: B

Question 78

Select the word which means the same as the group of words given.
One who loves mankind

A Humanist

B Philologist

C Philanthropist

D Philosopher

Answer: C

Question 79

Select the synonym of the given word.
ABILITY

A   Disposition

B   Outlook

C   Instinct

D   Capacity

Answer: D

Question 80

Select the antonym of the given word.
VIRTUOUS

A   Worthy

B   Honest

C   Kind

D   Vicious

Answer: D

Instructions

In the following passage some words have been deleted. Fill in the blanks with the help of the alternatives given.
Passage:

Fundamentally, all human beings possess a combination of fixed inherited traits. All individuals possess the ....(1) highly developed nervous system, backbones, erect posture, hair, etc. Therefore, ...(2) among human beings arise only in ....(3) changes of this basic pattern. Racial differences ....(4) one of the finest distinctions and are based only on ....(5) slight differences.

Question 81

Select the most appropriate option that will fill in the blank number 1.

A   natural

B   large

C   same

D   different

Answer: C

Question 82

Select the most appropriate option that will fill in the blank number 2.

A similarities

B naturalness

C sameness

D variations

Answer: D

Question 83

Select the most appropriate option that will fill in the blank number 3.

A minor

B complete

C large

D fundamental

Answer: A

Question 84

Select the most appropriate option that will fill in the blank number 4.

A show

B represent

C give

D present

Answer: B

Question 85

Select the most appropriate option that will fill in the blank number 5.

A hidden

B possible

C clear

D certain

Answer: D

Instructions
For the following questions answer them individually

Question 86

Fill in the blank with the most appropriate option.
Devika is the most .... of them all and has managedto do well in her profession.

A intelligent

B simple

C insolent

D audacious

   Answer: A

Question 87

Select the option that means the same as the given idiom.
Haveseveralirons in the fire

A Doing iron related work

B Having too many engagements at a time

C Burning unwanted pieces of iron

D Talking to many persons simultaneously

   Answer: B

Question 88

Select the synonym of the given word.
CHARACTER

A Performance

B Spirit

C Mannerism

D Trait

   Answer: D

Question 89

Select the antonym of the given word.
TRANSPARENT

A White-coloured

B Translucent

C Milky

D Opaque

   Answer: D

Question 90

Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select No improvement.
The rules of chess require that one <u>has to makes</u> only one move at time.

A made

B has to make

C will make

D No improvement

  Answer: B

Question 91

Select the word which means the same as the group of words given.
A person who is more than hundred years old

A Centurial

B Centuriator

C Centurion

D Centenarian

  Answer: D

Question 92

Select the correctly spelt word.

A Incorigible

B Incorrigible

C Incourrigible

D Incorrigibel

  Answer: B

Question 93

Select the most appropriate option to fill in the blank.
He has been .... my birthdayall week!

A celebrate

B celebrating

C celebrated

D celebrates

  Answer: B

Question 94

Fill in the blank with the most appropriate option.
Suresh is .... in collecting stamps.

A   habitual

B   interested

C   customary

D   habituated

   Answer: B

Question 95

Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select No improvement.
He decided to <u>leave very quickly the hotel.</u>

A   leave the hotel quickly.

B   leave quickly the hotel.

C   quickly leave hotel.

D   No improvement

   Answer: A

Question 96

From the given options, identify the segment in the sentence which contains the grammatical error.
If the report did not have the information neededit could not be used by them.

A   be used by them

B   it could not

C   If the

D   information needed

   Answer: C

Question 97

From the given options, identify the segment in the sentence which contains the grammaticalerror.
The errors for the typed reports were so numerousthat they could hardly be overlooked.

A   typed reports

B   could hardly be

C   so numerous

D   errors for

   Answer: D

Question 98

Select the most appropriate option to fill in the blank.
.... in Nagpur, we are unwilling to move to another city.

A   Since we have lived

B   Since we were living

C   Being that we are living

D   Since we have been living

  Answer: D

Question 99

Select the option that means the same as the given idiom.
In high spirits

A   Become successful

B   Feel joyful

C   Create confusion

D   Remain calm

  Answer: B

Question 100

Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select No improvement.
Though a hero, he acted <u>a coward.</u>

A   like a coward

B   cowardly

C   No improvement

D   as coward

  Answer: A