Pabitra Sir Classes

Dream, Aim, Achieve

Personal guidance center for CAT, GMAT preparation

CMAT 2021 SLOT 2

Contact

Quantitative Techniques and Data Interpretation

Instructions

For the following questions answer them individually

Question 1 Given: Anuj takes 1 day to complete a job. Bharat takes twice the time as Anuj to complete the same job. Chetan takes twice the time as Bharat to complete that job. Dhiraj takes twice the time as Chetan to complete that job.

(A) Chetan and Dhiraj will take 8/3 days to complete the work

(B) The second fastest pair to complete the work is Anuj and Dhiraj

(C) The second slowest pair to complete the work is Bharat and Dhiraj

(D) Bharat and Dhiraj will take 4/3 days to complete the work

A   (A), (B) and (C) only

B   (A) and (D) only

C   (A) and (C) only

D   (A) only

Answer: C

Explanation:

Anuj takes 1 day to complete Bharat takes 2 days Chetan takes 4 days and Dhiraj takes 8 days to complete

option A chetan and Dhiraj together will take $\frac{4\times8}{4+8} = \frac{32}{12} = \frac{8}{3}$ So, A is correct.

Now calculating for all we get AB in 2/3 days AC in 4/5 days AD in 8/9 days BC in 8/6 days BD in 16/10 days So we can say BD is 2nd slowest pair Hence A and C are correct.

Question 2 How many ten-digit numbers can be formed using all the digits of 2435753228 such that odd digits appear only in even places?

A   2!3!5!

B $(5!)^2$

C $\frac{(5!)^2}{3!}$

D $\frac{(5!)^2}{3!(2!)^2}$

Answer: D

Explanation:

we have : 2435753228

Now here we have 5 odd digits and 5 even digits and total 10 places

so 5,5,3,3,7 will arrange in 5 places and 2,2,2,8,4 will arrange in 5 places

we get : total arrangements = $\frac{5!}{3!} \times \frac{5!}{2! \times 2}$

we get, $\frac{(5!)^2}{3!(2!)^2}$

Question 3

Given below are two statements

Statement I : $(543)_6$ is equivalent to $(317)_8$

Statement II : The last 4 bits in the binary representation of a multiple of 16 is 1000. In light of the above statements, choose the correct answer from the options given below

A   Both Statement I and Statement II are true

B   Both Statement I and Statement II are false

C   Statement I is true but Statement II is false

D   Statement I is false but Statement II is true

Answer: C

Explanation:

$$543 \ in \ base \ 6 \ expressed \ in \ decimal \ form \ = 5(36) + 4(6) + 3 \ = 207$$

$$317 \ in \ base \ 8 \ expressed \ in \ decimal \ form \ = \ 3(64) + 8 + 7 \ = 207$$

$$So \ statement \ 1 \ is \ correct$$

$$Now \ 16 \ in \ base \ 2 \ = \ 10000$$

$$32 \ in \ base \ 2 \ = \ 100000$$

$$Therefore \ statement \ 2 \ is \ false$$

$$Hence \ C \ is \ the \ correct \ answer$$

Question 4

During the next year, the probability that a Company A releases a mobile is 0.7. The probability that mobile is a success. given that it is released by the Company is 0.8. The probability that a mobile is a success and released by a Company B is 0.28. A mobile released by either Company A or Company B during the next one year is a success. Find the probability that it is released by Company A.

A $\frac{1}{3}$

B $\frac{1}{2}$

C $\frac{2}{3}$

D $\frac{3}{4}$

Answer: C

Explanation: Probability that A releases a mobile = 0.7

Probability that mobile is a success given that it is released by A = 0.8

Probability that mobile is released by A and is success = 0.8*0.7 = 0.56

And probability that mobile is a success and released by B = 0.28

Total probability for success = 0.56+0.28 = 0.84

Now Probability that it is success and is released by A = 0.56/0.84 = 2/3

Question 5

If a is $\frac{3}{2}$ times of b, b is $\frac{3}{4}$th of c and d is $\frac{1}{4}$th of c, the ratio of a and d is

A 8:3

B 9:1

C 8:1

D 9:2

Answer: D

Explanation:

$$a = \frac{3}{2}b$$

$$b = \frac{3}{4}c \; and \; d = \frac{c}{4} \rightarrow c = 4d$$

$$Now \; substituting \; we \; get$$

$$a = \frac{3}{2} \times \frac{3}{4} \times 4d$$

$$So, we \; get \; a = \frac{9}{2}d$$

$$a:d = 9:2$$

Question 6

Pipe X can fill a tank in 12 hours and pipe Y can empty the tank in 18 hours. Both pipes are opened at 8 am and after some time Y is closed, and the tank is full at 10 pm on the same day. At what time was pipe Y closed?

A   1 pm

B   10 am

C   11 am

D   12 noon

Answer: C

Explanation:

Let volume be 36 units so X fills at 3 units per hour and Y empties at 2 units per hour Now Tank was filled in 14 hrs so X filled 14*3 =42 units Now therefore Y emptied 6 units so it will empty 6 units in 3 hours so Y will be closed at 11 am

Question 7

The price of an apple is twice that of an orange. The price of an orange is thrice that of a banana.If the price of an apple increases by 10%, price of an orange increases by 30% and the price of a banana increases by 20%. Find the percentage increase in the price of 20 apples, 20 oranges and 20 bananas.

A   19%

B   17%

C   15%

D   13%

Answer: B

Explanation:

Let price of banana be x

so price of orange = 3x

and price of apple will be 6x

Price of 20 bananas , apples and oranges = 200 x (1)

Now f the price of an apple increases by 10%,

it becomes = 6.6x

so price of 20 apples = 132x

if price of an orange increases by 30% it becomes = 3.9x

so price of 20 oranges = 78x

if price of a banana increases by 20%

it becomes 1.2 x

so price of 20 bananas = 24x

Now total price of 20 bananas , apples and oranges =234x (2)

So Percentage change in price $= \frac{234x - 200x}{200x} \times 100 = 17\%$

Question 8

The difference between the compound interest and simple interest for two years on a certain sum at a certain rate of interest is Rs. 64. The compound interest for two years is Rs. 704. The principal is

A   800

B   1600

C   2400

D   3200

Answer: B

Explanation:

We have

$$P\left(\frac{R}{100}\right)^2 = 64$$

And

$$P\left(1 + \left(\frac{R}{100}\right)\right)^2 - p = 704$$

Now dividing both we get :

$$\left(\frac{P\left(\frac{R}{100}\right)^2}{P\left(1 + \left(\frac{R}{100}\right)\right)^2 - 1}\right) = \frac{1}{11}$$

Solving we get R/100 = 5

Now substituting we get P = 64*25 = 1600

Question 9

A vessel has 500 litres of milk. 50 litres of milk is replaced with 50 litres of water in this vessel. If this operation is repeated another 2 more times, whatis the percentage of milk in the vessel at the end?

A   70.0

B   72.9

C   80.0

D   81.0

Answer: B

Explanation:

We have formula :

$$F = I\left(1 - \frac{K}{V}\right)^n$$

Here n =3 V =500 k =50 substituting we get F/I = 729/1000

Therefore in percentage F = 72.9 percent

Question 10

A started a business with Rs. 50000. After three months, B joins with an investment of Rs. 60000 and A withdraws Rs. 10000 out of his capital. Three months later, B brought in Rs. 20000 more. At the end of the year, what should be the ratio in which they A and B share the profits?

A   22:15

B   13:22

C   17:22

D   15:22

Answer: C

Explanation:

Profit share = Investment * Time period

Now we get ratio of profit of A and B

50,000× 3 + 40,000× 9

60,000× 3 + 80,000× 6

we get ratio as $\frac{510}{660} = \frac{17}{22}$

Question 11

In a company there are 252 engineers, in which the ratio of the number of electronics engineers and computer engineers is 2 : 1. The ratio of the number of electronics engineers and computer engineers becomes 1:1 after recruitment of some more computer engineers. The average age of all the engineers is now 22 years and the average age of the computer engineers is 2 years less than the average age of electronics engineers.

(A) The average age (in years) of electronics engineers is 21

(B) The average age (in years) of computer engineers is 21

(C) The average age (in years) of electronics engineers is 23

(D) The average age (in years) of electronics engineers is 25

(E) The average age (in years) of computer engineers is 23

Choose the correct answer from the options given below:

A   (A) and (E)only

B   (B) and (C) only

C   (D) and (E) only

D   (E) only

Answer: B

Explanation:

$$Number\ of\ electronics\ engineers\ initially\ = \frac{2}{3} \times 252 = 168$$

$$So\ number\ of\ computer\ engineers\ initially\ =\ 252 - 168\ = 84$$

$$Now\ number\ of\ computer\ engineers\ recruited\ to\ make\ ratio\ 1:1\ =\ 168 - 84\ = 84$$

$$Let\ average\ age\ of\ computer\ engineers\ be\ x$$

$$so\ total\ age\ \ will\ be\ 168x$$

$$Now\ average\ age\ of\ electronics\ engineers\ will\ be:\ x + 2$$

$$So\ total\ age\ will\ be:\ (x + 2)168$$

$$Now\ as\ per\ given\ Total\ age\ =\ 336(22)$$

$$Equating\ we\ get:\ 336(22) =\ 336(x + 1)$$
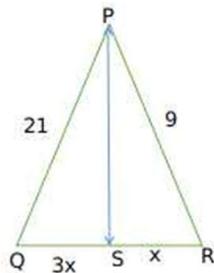
$$we\ get\ x = 21\ so\ B\ and\ C\ are\ correct$$

Question 12

In triangle PQR. PS is perpendicular to QR and S divides QR in the ratio of 3 : 1 internally. If PQ=21 and PR =9,find QR.

A $18\sqrt{5}$

B $16\sqrt{5}$

C $15\sqrt{5}$

D $12\sqrt{5}$

Answer: D

Explanation: we have

Triangles PSR and PSQ are right triangles
so using pythaghoras theorem
we get
$441 = PS^2 + 9x^2$
$81 = PS^2 + x^2$
subtracting we get
$360 = 8x^2$
$x^2 = 45$
$x = 3\sqrt{5}$
$QR = 4x = 12\sqrt{5}$

Question 13

In a 1000 metre race, Rahul reaches the finishing line 5 seconds before than Raj and beats Raj by 50 metre. What is Rahul's speed (in m/s)?

A $11\frac{9}{19}$

B $9\frac{9}{19}$

C $10\frac{10}{19}$

D $9\frac{10}{19}$

Answer: C

Explanation:

Let speed of Raj be v1 and speed of Rahul be v2

Now Rahul reaches 5 seconds before Raj and beats him by 50m

so Raj covers 50m in 5 seconds

so v1 = 10m/s

Now When Raj covers 950m Rahul covers 1000m (in the same time)

so we get $\frac{v1}{v2} = \frac{100}{950}$

$$hv1 = \frac{200}{19} = 10\left(\frac{10}{19}\right) m/sec$$

Question 14

A shopkeeper claims to sell rice at cost price. He uses a false weight with the intention of selling rice at 25% profit. After selling Rice to a customer, he realizes that the customer has paid 10% less than what he should have paid. What is the actual profit percentage made by the shopkeeper?

A   6.25%

B   10%

C   12.5%

D   15%

Answer: C

Explanation:

Let cost price be 1000 per Kg of rice

Now to make 25% profit at 1000

He will sell 800 gm of rice

Now C.P of 800 gm of rice = 800

Now he sold at 10% less than 1000 so S.P = 900

Now therefore profit $= \frac{900-800}{800} \times 100 = \frac{100}{8} = 12.5\%$

Question 15

Meera and Sarika attempted to solve a quadratic equation in x. Sarika made a mistake in reading the coefficient of x and obtained the roots as 12 and 16. Meera made a mistake in reading the constant term of the equation. She obtained the roots as-22 and - 6.

The corrects root(s) is (are) :

(A) -16

(B) -12

(C) 12

(D) 16

Choose the correct answer from the options given below:

A   (A) and (B) only

B   (A) and (C) only

C   (C) and (D) only

D   (B) and (D) only

Answer: A

Explanation:

Let quadratic equation be $x^2 + bx + c = 0$

Now Sarika made a mistake in reading b ,

so she would have read c correctly so c/1 = product of roots =192   (1)

Meera made a mistake in reading the constant term of the equation

so she would have read b correctly now sum of roots = -b/1 =-28 (2)
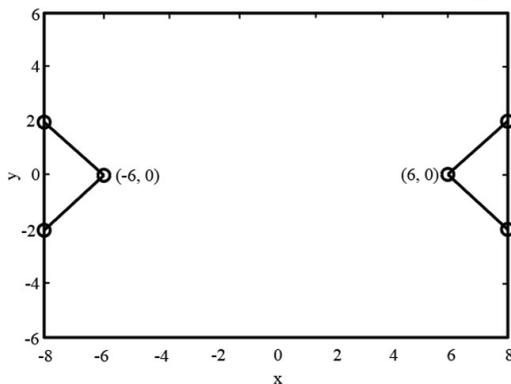
we get b =28 , c =192

so quadratic becomes $x^2 + 28x + 192$

we get (x+16)(x+12) =0

roots are -16 , -12

Question 16

Which of the following equations best describes the graph given below?

A $| x + y | - | x - y | = 6$

B $| x - y | + | x + y | = 10$

C $| x | - | y | = 6$

D $| x + y | - | x - y | = 0$

Answer: C

Explanation:

In these type of questions we go through the options :

Now when x=6 or -6 the value of y is 0

so let us put value of y=0 in all options and check which option satisfies x=6 and -6

Putting x=6 and y=0 in option A

we get |6+0|-|6-0| = 0 But RHS =6 so this option is discarded

Now putting in option B |6-0|+|6+0| =12 But RHS is 10 so this option is also discarded .

Now option C we get

|6|-0 =6

so we can say graph can be of |x|-|y|=6

Now satisfying option D

we get |6+0|-|6-0|=0

So we can say 6,0 and -6,0 satisfies option D as well

Now you have to eliminate between C and D

If you observe |x+y|-|x-y|=0 will pass through origin

and the graph here is not passing through origin so you can eliminate option D

Therefore the graph will be |x|-|y|=6

Question 17

In a company, the average salary of the boys is Rs. 50000. The average salary of all the employees is Rs. 48000. There are 80 boys in the company and the average salary of the girl is Rs. 40000. What is the number of girls working in the company?

A   12

B   15

C   20

D   24

Answer: C

Explanation:

Let girls be x Total employees will be 80+x

now total value of money will be same :

i.e Average of 1employee (Number of employees) will be equal to (Average of boys)* Number of boys +(Average of girls)*Number of girls

we get 48000(80+x) = 50,000(80)+40,000(x) 48(80+x) = 50(80) +40x

we get 8x =160 x=20

Question 18

A roller is 4m long and has a diameter of 0.7m. It takes exactly 2000 rotations of the roller to level a road. If the cost of using the roller is Rs.4 per square metres, then the total cost of levelling the roadis :
Assume, $\pi = \frac{22}{7}$

A   Rs.17600

B   Rs.35200

C   Rs.70400
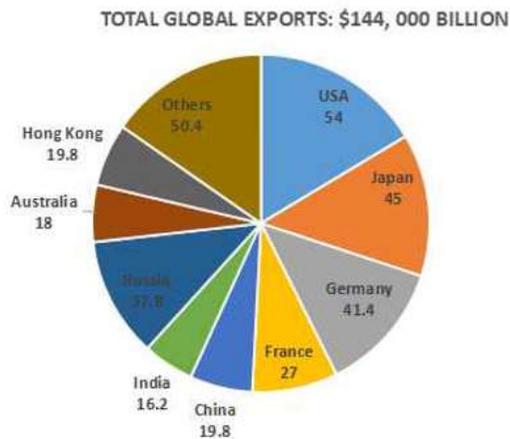
D   Rs.140800

Answer: C

Explanation:

Curved Surface area of roller $= 2\pi rh$

Cost = Area covered* cost per meter square

so we get total cost = $2 \times \frac{22}{7} \times \frac{7}{20} \times 4 \times 4 \times 2000 = Rs\ 70400$

Instructions

Study the pie chart and answer the questions that follow:

TOTAL GLOBAL EXPORTS: $144, 000 BILLION

Note : The value of exports represents the angle corresponding to each country in the pie chart.

Question 19

The ratio of the value of exports between the total exports of USA and Japan to the total exports of Australia and France is

A   5:9

B   9:5

C   11:5

D   5:11

Answer: C

Explanation:

Total Angle for USA and Japan = 54+45 =99

Total angle for Australia and Japan = 18+27 =45

Since total is same so ratio of total exports of USA and Japan to the total exports of Australia and France will be 99:45 = 11:5

Question 20

What is number of countries whose exports are more than the average exports per country? (Assume'Others' as a single country)

A   4

B   5

C   6

D   7

Answer: B

Explanation:

Total countries = 10

So average angle will be 360/10 = 36

Now therefore countries subtending angle>35 are 5 .

Question 21

By how much does the value of the exports of Japan exceed that of Australia?

A $ 10800 billion

B $ 21600 billion

C $ 38880 billion

D $ 49680 billion

Answer: A

Explanation:

Angle exceeds by 45-18 =27

so value will be $\frac{27}{360} \times 144{,}000 = 10{,}800 \ billion\$$

Question 22

What is value of total exports of USA and France as a percentage of the total exports of Japan, China, Russia and Hongkong?

A   64.9764

B   65.5764

C   66.1574

D   66.1764

Answer: D

Explanation:

Total angle of USA and France =81

Total angle of Japan, China, Russia and Hongkong =122.4

Now therefore total exports of USA and France as a percentage of the total exports of Japan, China, Russia and Hongkong: $\frac{81}{122.4}100 = 66.1764$

Instructions

For the following questions answer them individually

Question 23

The minimum value of $\frac{3(6+x)(x+12)}{2(4+x)}$, where x>-4 is

A   18

B   27

C   36

D   45

Answer: B

Explanation:

Let, $x + 4 = y$

So, the expression $\frac{3(6+x)(x+12)}{2(4+x)} = \frac{3(y+2)(y+8)}{2(y)} = \frac{3}{2} \times \frac{y+16}{y+10}$

$$The\ minimum\ value\ of\ y + \frac{16}{y}\ is\ 8\ when\ \ equals\ 4$$

$$So, the\ minimum\ value\ of\ the\ expression\ is\ 3/2 * 18\ = \ 27$$

Question 24

Let $g(x) + g\left(\frac{1}{x}\right) 1 + 3x$, Findd the value of $g(3)$

A - 4

B -1/2

C 1/2

D 3

Answer: E

Explanation: The question appeared in CMAT 2021 Slot 2 and the question is incorrect . Marks were awarded to students.

Question 25

Find the sum ofthe following series (with infinite terms):

$$2\sqrt{2}, \frac{4}{\sqrt{3}}, \frac{4\sqrt{2}}{3}, \dots\dots$$

A $2\sqrt{3}(\sqrt{3} + \sqrt{2})$

B $2\sqrt{3}(\sqrt{3} - \sqrt{2})$

C $2\sqrt{6}(\sqrt{3} + \sqrt{2})$

D $2\sqrt{6}(\sqrt{3} - \sqrt{2})$

Answer: C

Explanation:

The series is an infinite Geometric progression with first term as $2\sqrt{2}$ and common ratio $\sqrt{\frac{2}{3}}$

Now we know that sum of an infinite geometric progression $=\frac{a}{1-r}$ where r is the common ratio and a is first term

so we get sum $= \frac{2\sqrt{2}}{1-\sqrt{\frac{2}{3}}} = \frac{2\sqrt{6}}{\sqrt{3}-\sqrt{2}} = 2\sqrt{6}(\sqrt{3} + \sqrt{2})$

Logical Reasoning

For the following questions answer them individually

Question 26

In a certain language ABCD is coded as CABF

FGHI is coded as HFGK

UVWkX is coded as WUVZ

How is KLMN coded?

A KLMP

B MKLP

C MNOP

D MNPO

Answer: B

Explanation:

First letter is coded with the 2nd to the right of it in alphabet series

2nd letter is coded with immediate previous letter

3rd letter with immediate previous letter

4th letter is coded with 2nd to the right of it in alphabet series

so KLMN will be coded as MKLP

Question 27

If A # Bis the mother of A

A $ B means A is the father of B

A % B means A is sister of B

A * B means A is the son of B

A @ B means A is brother of B

and A ! B means A is the daughter of B

In the expression P$Q#R@S, how is R related to P?

A Grandson

B Great Grandson

C   Son

D   Daughter

Answer: A

Explanation: P$Q means P is the father of Q

Now Q#R will mean Q is mother of R

So we can say R's mother's father is P

So R is either Grand daughter or Grand son of P

Now R@S means R is brother of S so R is a male

so R is grandson of P

Question 28

Find the next character sequence in the series

FAC, ICF, LEI, OGL, RIO....

A   UNR

B   ULS

C   TKR

D   UKR

Answer: B

Explanation:

Take 1st letter of all terms we get a series F,I,L,O,R

we get next as U Taking 2nd letter of all terms

we again get a series with a pattern : A,C,E,G,I

so next will be L

so we get answer as ULS

Question 29

The question below consists of a main statement followed by four options. Select the one that logically follows the main statement The slip fielder can catch a ball, only if the batsman is brought to the front foot and he tries to hit the ball

A   The batsman is brought to the front foot. hence the slip fielder cannot catch the ball

B   The batsman did not try to hit the ball. hence the slip fielder cannot catch the ball

C   The fielder caught the ball, means that the batsman was brought to the front foot and he did not try to hit the ball

D   All the above

Answer: B

Explanation:

We have The slip fielder can catch a ball, only if the batsman is brought to the front foot and he tries to hit the ball

Now going through options

A cannot be inferred option can be termed as negation of statement and can be inferred

Question 30

In the following questions find out the alternative which will replace the question mark.

CHICKEN : CHICK :: PIG: ?

A   Lamb

B   Piglet

C   Foal

D   Cub

Answer: B

Explanation: A chick is young chicken so we get piglet which is a young pig

Question 31

Find the next number in the series 210, 195, 175, 150,120,…… ?

A   85

B   95

C   80

D   100 Answer: A

Explanation:

210-195 =15 ; 195-175 =20 ; 175-150 =25 ; 150-120 =30

so we get next number as 120-35 =85

Question 32

P,Q, R, S, T, U, V, W are sitting in a row facing north

(A) P is fourth to right of T

(B) S is fourth to the left of Q

(C) R and U, which are both at the ends are neighbours of Q and T respectively

(D) W is immediate left of P and P is neighbour of Q

Who are the immediate neighbours of W?

A   Q and V

B   V and R

C   V and P

D   U and P

Answer: C

Explanation:

From A and C we get UT_ _ _ _PQR

Now combining all we get : UTSVWPQR

So neighbours of W are P and V

Question 33

P,Q, R, S, T, U, V and W are sitting round the circle and are facing the centre: P is second to the right of T who is the neighbour of R and V. S is not the neighbour of P. V is the neighbour of U. Q is not between S and W. W is not between U and S. U is the right of S. Who is sitting adjacent to V?

A   U and T
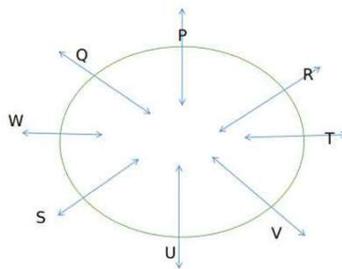
B   U and R

C   T and P

D   W and P

Answer: A

Explanation:

We get the arrangement as :

U and T are adjacent to V

Question 34

Three out of four are alike in a particular pattern and hence form a group.

Find which does not belong to the group 2835, 5671, 8505, 11344

A   8505

B   5671

C   11344

D   2835

Answer: C

Explanation:

Now 5671-2835 =2836

8505-5671 =2834

Now 11344-8505=2839

Now the difference should have been 2832

so we can say 11344 is the wrong term or it do not belong the group

Question 35

Below two pairs of numbers are given. But one numberin the second pair is missing. Identify the relationship between the two numbers in first pair and find the second number of the second pair such that it follows the same relationship as that of first pair. 7 : 77 :: 14:.....

A   196

B   252

C   98

D   232

Answer: B

Explanation:

7:77

7(7+4) =77

similarly we get 14(14+4) = 252

Question 36

How many pages of the book Ram read on Monday. The book was read completely by Tuesday. Statement I: Ram read last 30 pages of the book on Tuesday

Statement II: The book has 600 pages out of which half were read by Ram before Monday In light of the above statements. choose the most appropriate answer from the options given below

A   Data in Statement I alone is sufficient to find the answer

B   Data in Statement II is sufficient enough to find answer

C   Data in Statements I and II together is not sufficient to find the answer

D   Data in both the Statements is sufficient to find the answer

Answer: D

Explanation: I alone will not give us the answer

similarly using 2 we get Pages on Monday + Pages on Tuesday = 300

Combining both we can get pages read on Monday = 300-30 = 270

So D is the correct answer.

Question 37

Find the missing Letter / number B2CD, DE3F..... H5Id, J6KL

A   D3GH

B   G3HI

C   FGH4

D   FG4H

Answer: C

Explanation:

The number in missing term should be 4

The alphabets in 1st term are BCD then DEF

so next will be FGH

Now the pattern is B2CD ,DE3F,FGH4

Question 38

In a certain code language.

if the word RESERVE is coded as GXTGUGT,then how is the word PRESENT coded in that language

A   VPGUGTR

B   VPUGGTR

C   VPGUTGR

D   RGTUGPV

Answer: A

Explanation:

First we have to reverse the word RESERVE

We get E V R E S E R

Now E+2 =G , V+2 =X ,R+2 =T ,E+2 =G,S+2 =U, E+2 =G , R+2 =T

Similarly for PRESENT

we will get code as VPGUGTR

Question 39

In a certain code language, if REPTILE is coded as 49 and SNAKE is coded as 25, then how is CROCODILE coded in that language.

A   64

B   36

C   81

D   100

Answer: C

Explanation:

REPTILE is a 7 letter word and we have 7^2=49

Similarly snake is a 5 letter word and we have 5^2=25

Therefore CROCODILE will be 9^2=81

Question 40

A number-arrangement machine, when given an input string of numbers, arranges them following a particular pattern. The following is the illustration of an input and its arrangement.

Input:	3	4	9	7	6	11
Step I	9	16	81	49	36	121
Step II	12	20	90	56	42	132
Step III	17	25	95	61	47	137
Step IV	15	23	93	59	45	135

As per the rules followed in the above steps, find the appropriate answer If 159 is one of the numbers in Step IV, which of the following can be input number?

A   13

B   10

C   12

D   22

Answer: C

Explanation:

We observe that :

Step II+5 = Step III and Step III-2 =StepIV

Step IV -3 = Step II

Now therefore Step II for 159 = 156

Now Input is k then step 1 is k^2 and step II is k^2+k

We get k^2+k =156 k=12

so input is 12

Question 41

Find the next number in the series 7, 9. 14, 27, 28,81, ?

A   62

B   84

C   65

D   56

Answer: D

Explanation:

The digits at odd places are getting double than the previous odd digit

so we get 7,14,28 , 56

so 56 is the answer.

Question 42

The question below consists of a main statement followed by four options. Select the one that logically follows the main statement If I drive a car, then it is a BMW or a Skoda.

A   I am driving a car. means that it is a BMW or a Skoda

B   The car is neither BMW noraSkoda. hence I do not drive a car.

C   I drive a car but it is not a Skoda, meansit is a BMW

D   All the above

Answer: D

Explanation:

If I drive a car, then it is a BMW or a Skoda.

From this statement all the given statements can be concluded

Hence the correct answer is all of the above

Question 43

If in a certain language, ITNIETAM is the code for INTIMATE, which word has the code TREVNIETARBI?

A   INVRETIBRATE

B   INVERTIBRATE

C   INVERTIBRETA

D   INVERTIBARTE

Answer: B

Explanation:

The letters in the first half and last half of the code sir separately reversed to obtain the word.

So we get INVERTIBRATE as answer

Question 44

A number -arrangement machine, when given an input string of numbers, arranges them following a particular pattern. The following is the illustration of an input and its arrangement.

Input:	3	4	9	7	6	11
Step I	9	16	81	49	36	121
Step II	12	20	90	56	42	132
Step III	17	25	95	61	47	137
Step IV	15	23	93	59	45	135

What is the input if the following is the arrangement of Step IV? 9, 75, 113, 213, 33, 5

A   2, 10, 8, 14, 5, 3

B   2, 10, 8, 13, 5, 1

C   2, 8, 10, 14, 5, 1

D   3, 8, 9, 13, 5, 1

Answer: C

Explanation:

Step IV we have 9, 75, 113, 213, 33, 5

Now step II+5 = Step III and Step III-2 =StepIV

So we get Step II Step IV -3

Now so Step II =6,72,110,210,30,2

Now Input is k then step 1 is k^2 and step 2 is k^2+k

so equating k^2+k with numbers

we get input as : 2,8,10,14,5,1

Question 45

Among the six persons P, Q, R. S, T, U. each is having different weights P is heavier than 3 persons. R is lighter than T S is lighter than only Q R is not the lightest Who is lighter and heavier than P respectively?

A   T and S

B   R and S

C   S and R

D   T and Q

Answer: A

Explanation:

S is lighter than only Q

so we can say S is 2nd heaviest and Q is heaviest

P is heavier than 3 persons so P is the third heaviest

we get Q>S>P

Now T>R as per 1 and R is not the lightest

so U is the lightest

we get Q>S>P>T>R>U so T and S are lighter and heavier than P respectively.

Question 46

The question below consists of a main statement followed by four options. Select the one that logically follows the main statement. "Whenever I go shopping. I end up spending more'

A   I went for shopping means I end up spendingless

B   I did not go for shopping: implies I did not spend more

C   I did not spend more, means I did not go for shopping

D   Both (1) and (2)

Answer: C

Explanation:

It says "Whenever I go shopping. I end up spending more'

this is of the form x implies y

so taking negation we get negation y implies negation x

so we get I did not spend more, means I did not go for shopping

Hence option C is the correct answer.

Question 47

In a certain code language BCG is coded as EFJ. How is the word FALSE coded?

A   IJKLM

B   JEPWI

C   IDOVH

D   IDOWJ Answer: C

Explanation:

BCG is codes as EFJ

Each alphabet corresponds to the third alphabet to ts right

so FALSE will be coded as IDOVH

Question 48

The question below consists of a main statement followed by two statements. Select the one that logically follows the main statement "Private property. trespassers will be prosecuted" - A notice on a plotof land.Given below are two statements Statement I: The passer-by may read the notice and may not trespass. Statement II: The people are scared of prosecution In light of the above statements, choose the most appropriate answer from the options given below:

A   Only Statement I is implicit

B   Only StatementII is implicit

C   Both Statements I and II are implicit

D   Neither I nor II are implicit

Answer: C

Explanation:

When a notice is displayed, it is assumed that people will read and follow the content so I is implicit

And as notice threatens any trespassers to be prosecuted so II is implicit

Hence C is the correct answer.

Question 49

The question below consists of a main statement followed by four options. Select the one that logically follows the main statement Unless I score well, I will not get selected

A   I was not selected, means I did not score well

B   I am selected, implies I scored well

C   I did not score well. means I will not be selected

D   Both (2) and (3)

Answer: D

Explanation:

Unless I score well, I will not get selected

This means If I am selected it means I scored well and if I did not score well I will not be selected

Hence both 2 and 3 can be inferred

Question 50

A number -arrangement machine, when given an input string of numbers, arranges them following a particular pattern. The following is the illustration of an input and its arrangement.

Input:	3	4	9	7	6	11
Step I	9	16	81	49	36	121
Step II	12	20	90	56	42	132
Step III	17	25	95	61	47	137
Step IV	15	23	93	59	45	135

As per the rules followed in the above steps, find the appropriate answer Which is the fifth number from the left end in step III of the following input? 6, 2, 14, 17, 8, 13

A   64

B   72

C   75

D   7

Answer: D

Explanation:

Input is 6, 2, 14, 17, 8, 13 Step I will be 36,4,196,289,64,169

Now step II = Input ^2+Input we get Step II = 42,6,210,306,72,182

Now Step III = Step II +3

We get Step III = 45,9,213,309,75,185

Now the fifth number from the left end in step III of the following input =7

Instructions

Read the Passage below and answerthe question that follows:

Human beings are connected at the level of feeling and emotion: in such a degree that there is practically a subterranean network of the psyche in which some encounters are damaging, some nourishing. This emotional exchange is typically at a subtle. almost imperceptible level. The way a colleague says 'thank you' can leave one feeling ignored, resented or genuinely welcomed and appreciated. We catch feelings from one another as though they were somekindofsocial virus. Every space is full of emotional signals and every time people connect, they transmit and receive those signals. These emotional encounters have an effect on all the people in that particular circle. Those whoare socially skillful can control these emotional messages.Acivil and polite society is able to regulate and control these emotionalrelationships in less damaging ways. The Emotional Quotientof a society is the sum total of the emotional intelligence of its citizens. When we complimentothers for being considerate,we are actually acknowledging their emotional intelligence. The company of such people is a relaxing experience and they are a valuable and enriching presence in any society. Whetherwelike it or not, we are all interdependent in terms of our feelings and emotions and our emotional intelligence form the frameworkofsociety.

Question 51

The authorfeels that when we meet people some meetings can be

A   Happy

B   Enriching

C   Troublesome

D   Sad

Answer: A

Question 52 The company of what kind of people is relaxing?

A   Emotional people

B   Considerate people

C   Emotionally intelligent people

D   Emotionally calm people Answer: C

Instructions

For the following questions answer them individually

Question 53

Fill in the blank Either my uncle or my aunt ——————————— coming to the party

A   in

B   are

C   would

D   aren't

Answer: E

Question 54

Fill in the blank The cat is wagging ——————- tail

A   its

B   it's

C   it is

D   its'

Answer: A

Question 55

Please select the sentence that makes the accurate use of the word'diffuse':

A   He was modest and diffuse about his own success

B   The problem is how to diffuse power without creating anarchy.

C   Technologies diffuse rapidly.

D   The moon was fuller than the night before, but the light was diffused by cloud.

Answer: B

Question 56

Pick out the correct sentence:

A   Write in ink.

B   The student uses a lots of inks.

C   This is a ink pen

D   Have your ink finished?

Answer: A

Question 57

'Raghav read the novel in one day' means the same as

A   One day, Raghav read a novel

B   Raghav reads the novel.

C   The novel was read by Raghav in one day.

D   One day Raghav reads the novel.

Answer: C

Question 58

Fill in the blank. When I visited them, she ——————————— working for six months.

A   had been

B   was

C   has been

D   were now

Answer: A

Question 59

Pick out the correct sentence:

A   He has two brother in law

B   He has two brother in laws

C   He has two brothers in laws

D   He has two brothers in law.

Answer: A

Question 60

Fill in the blank You must check the petrol _____ regular intervals.

A   in

B   with

C   at

D   within

Answer: C

Question 61

Read the passage and answer the question that follows: In tough times or in times of a crisis, the democratic nation often becomes an authoritarian one. During ordinary times, nobody thinks aboutthepolitical system. People just vote for those who make promises and try to keep them. As long

as the country is secure and there is reasonable development, no one is bothered about the leaders andthe policies. But,if there is some kind of aggressive revolution or a shortage of basic supplies or a lot of unemployed citizens, the leadership comes under question. Which one of the following statements best describes the central idea of the passage above:

A   if there is an economic collapse, democracy gets strengthened

B   People are least concerned with economic policies,if their life is not affected.

C   The communist governments were functioning without any popular support.

D   Citizens are one with the government in ensuring law and order when sections of the society revolt.
Answer: B

Instructions

Read the passage and answerthe question thatfollows:

The human body is nothing but a set of chemical reactions in some form or the other. The religious scriptures believe that man was made out of the image of the creator of the universe. Does this mean that Oxygen was pumped into the human body and carbon dioxide pumped out to create this being? Is life just the process of oxygenation and decarburization? If the human body is managed by these two processes, then we can safely believe that life came into existence due to these chemical reactions. The highly complex chemicals compounds present in the human body are not evident in lower animals or plants. These substances were born because of the synthesis of other smaller molecules.

A large number of recognized chemicals has been observed and provedto be involved in the transmission of impulses from one tissue or cell to another. Some examples of such chemicals are adrenaline, dopamine, acetylcholine, endorphins and encephalin. The increase or decrease of any one of these chemicals, interferes with the normal functioning of cells and tissues. This creates diseases in the body, and the restoration of their supply cures the diseases. The deficiency of acetylcholine leads to Alzheimer's disease, while a decrease in dopamine leads to Parkinson's disease and its increase causes schizophrenia, a mental disorder. Endorphins and encephalon work like a drug to produce sensations like pleasure and reduce pain. In depressed persons, lower levels of serotonin and adrenaline are observed. Exercise and meditation help release endorphins in order to produce a scene of calmness and pleasure. As for love, the brain releases a chemical substance called phenyl ethylene which acts like an amphetamineto increase mental alertness and physical energy. People with low levels of these chemicals develop a craving for foods such as chocolates, which are rich in such compounds.

Question 62

Which one of the words given below can be used in place of 'a mental disorder' as used in the passage?

A   Sickness

B   Derangement

C   Disease

D   Schizophrenia

Answer: D

Question 63

Which one of these wordsis the right synonym for 'synthesis' as used in the passage:

A   Reaction

B   Fusion

C   Collaboration

D   Union

Answer: B

Question 64

Which one of the words given below is the right antonym for 'alertness' as used in the passage?

A   Heedlessness

B   Consciousness

C   Adeptness

D   Ineptness Answer: A

Instructions

For the following questions answer them individually Question 65 Select the ONE sentence that makes correct use of the idiom 'once in a blue moon':

A   I go to school every day, once in a blue moon

B   Sheis lucky, she misses school only once in a blue moon.

C   Sunday comes once in a blue moon.

D   Indian festivals are celebrated once in a blue moon.

Answer: B

Question 66

Choose the sentence that uses the word 'apprise' correctly:

A   The problem is obviously one of deciding how to apprise the evidence presented here.

B   They should have taken the timeto apprise the changing political scenario

C   Let's apprise the advantages of air travel.

D   The assistant will apprise the director of the situation.

Answer: D

Question 67

I doubt if I _____ resisted the temptation

A   would have

B   should have

C   could have

D   will have

Answer: C

Question 68

Before we went hiking, we spent many hours ———————— over the maps

A   pouring

B   sitting

C   poring

D   pouting

Answer: C

Question 69

The British government ——————— terrified of offending ——-———— ally in Washington

A   are, its

B   is, their

C   is, our

D   is, its

Answer: D

Question 70 We went —————— the house. Select the word that best fits the above incomplete sentence and completes it:

A   passed

B   past

C   paste

D   pass

Answer: B

Question 71

The different forms to fill for a driving license are _____ Select the idiom that best fits the above incomplete sentence and completes it:

A   a pain in the neck

B   a flash in the pan

C   the last laugh

D   a slap in the face

Answer: A

Question 72 There was a ——————————— possibility that war would be declared soon. Select the word that best fits the above incomplete sentence and completes it:

A   Probable

B   Distinct

C   Dubious

D   Distinctive

Answer: B

Question 73

Select the sentence that makes correct use of it:

A   They have been waiting here since four hours

B   I have lived in this house since most of my life.

C   The family has been abroad since 1998.

D   She worked in the college since 1996 to 2001

Answer: C

Question 74

The fiery young politician ——————————— a spell on his audience

A   threw

B   put

C   cast

D   hurled

Answer: C

Question 75

We got back to the hotel _____ the stroke of midnight.

A   at

B   with

C   up

D   in

Answer: A

Instructions

For the following questions answer them individually Question 76 Which of the following copper alloys is used for the manufacture of springs and suspension filaments in electrical instruments?

A   Bronze

B   Aluminium bronze

C   German silver

D   Phosphorus bronze

Answer: D

Question 77

Who translated the book 'The Story of My Experiments with Truth' written by M.K. Gandhi from Gujarati to English?

A   Mahadev Desai

B   J.B. Kripalani

C   Mohanlal Pandya

D   Vinoba Bhave

Answer: A

Question 78

In contrast to what was previously recognized by Nepal, the height of Mt. Everest has now been found to be higher by how many centimetres?

A   85 cms

B   84 cms

C   86 cms

D   88 cms

Answer: C

Question 79

Article 371A of the Constitution of India provides special privileges to which one of the following state?

A   Nagaland

B   Mizoram

C   Sikkim

D   Manipur

Answer: A

Question 80

Which of the following indigenous sports has not been included in Khelo India Youth Games 2021?

A   Kalaripayattu

B   Gatka

C   Thang-Ta

D   Vallamkali

Answer: D

Question 81

India announced a Grant of USD 15 million for promoting Buddhist ties with which of the following country?

A   Nepal

B   Sri Lanka

C   Bangladesh

D   Vietnam

Answer: B

Question 82

What is the name of the Mental Health Rehabilitation Helpline, to be launched by the Social Justice Ministry?

A   Asha

B   Empower

C   Mind Tree

D   Kiran

Answer: D

Question 83

Who among the following foreigners was the first to visit India?

A   Hiuen-Tsang

B   Megasthenese

C   I Ching

D   Fahien

Answer: B

Question 84

Who among the following has won the maximum number of gold medals at a single Olympics games in the history of Olympics?

A   Michael Phelps

B   James Connelly

C   Mark Spitz

D   Abebe Bikila

Answer: A

Question 85

Who among the following is the fastest Asian to cycle the globe?

A   Vedangi Kulkarni

B   Xu Yukun

C   Miho Yoshikawa

D   Rameshwori Devi

Answer: A

Question 86

The world's first Yoga University outside India — 'Vivekananda Yoga University' was launched on 23"4 June 2020 in which city?

A   New York

B   London

C   Berlin

D   Los Angeles

Answer: D

Question 87

Ross Island in Andaman and Nicobar group of islands has been recently renamed as?

A   Shaheed dweep

B   Swaraj dweep

C   Netaji Subhas Chandra Bose Island

D   Atal Island

Answer: C

Question 88

Who among the following has been given the power by the Constitution of India to "Impose Reasonable Restrictions" on the fundamental rights?

A   President

B   Parliament

C   Supreme Court

D   Both Parliament and Supreme Court

Answer: B

Question 89

State Financial Corporations mainly give assistance to develop which of the following?

A   Small and medium scale industries

B   Agricultural farms

C   Cotton industry

D   Large scale industries

Answer: A

Question 90

Which Indian state has approved to rename caste-based settlements?

A   Tamil Nadu

B   Andhra Pradesh

C   Karnataka

D   Maharashtra

Answer: D

Question 91

Indonesia has released special commemorative stamp on theme of Ramayana to mark 70th anniversary of establishment of its diplomatic ties with India. Which scene of Ramayana has been depicted on the stamp?

A   Ram, Sita and Laxman return to Ayodhya after 14 years

B   Sita's Swayamwar

C   Jatayu fights to save Sita

D   Hanuman carries the mountain with Sanjeevani booti

Answer: C

Question 92

Consider the following statements about a classical dance form

(A) Tribhanga is a special feature of this dance.

(B) The torso movement is very important and is a unique feature of this dance.

(C) Many of today's Gurus of this style belong to the Gotipua tradition. Identify the classical dance form using the above clues.

A   Kuchipudi

B   Odissi

C   Sattriya

D   Kathakali

Answer: B

Question 93

If the Balance of Payment of a country is adverse, then which institution will help that country?

A   World Bank

B   World Trade Organization

C   International Monetary Fund

D   Asian Development Bank

Answer: C

Question 94

Which country has decided to re-introduce tax on big Digital firms like Facebook, Amazon, Google?

A   India

B   France

C   Germany

D   China

Answer: B

Question 95

Which author and natural historian has been confered with Indira Gandhi Peace Prize 2019?

A   Steve Backshall

B   David Attenborough

C   Terri Irwin

D   Chris Packham

Answer: B

Question 96

Which of the following kinds of cells in the human blood have the longest life span?

A   Basophil

B   Erythrocyte

C   Neutrophil

D   Platelets

Answer: B

Question 97 Which of the following organization has decided to formulate Digital Payment Index?

A   Niti Aayog

B   RBI

C   NPCI

D   SBI

Answer: B

Question 98

Which of the following indicators are parts of the Inclusive Development Index? (A) Living Standards (B) Environmental Sustainability (C) Protection of Future Generations from Further Indebtedness (D) Financial Inclusion

A   (A), (B) and (C)

B   (A), (C) and (D)

C   (B), (C) and (D)

D (A), (B) and (D)

Answer: E

Question 99 India has begun discussions with which of the following countries on launching trilateral Supply Chain Resilience Initiative (SCRD to reduce dependency on China, necessitated by Beijing's aggressive political and military behaviour?

A Sri Lanka and Japan

B Japan and South Korea

C Japan and Australia

D New Zealand and Australia

Answer: C

Question 100

Assertion (A): The Buland Darwaza at Fatehpur Sikri was built by Akbar in 1602. Reason (R): He wanted to commemorate his conquest of Gujarat.

A Both A and R are true and is the correct explanation of A

B Both A and R are true but R is not a correct explanation of A

C Ais true but is false

D Ais false but R is true

Answer: A