

RRB JE
29th May 2019
Shift-1

Instructions

For the following questions answer them individually

Question 1

Which of the following separation techniques is applied for separation of sodium chloride from its solution in water?

- A Sublimation
- B Filtration
- C Evaporation
- D Centrifugation

Answer: C

Question 2

Under which plan did the Government introduce an agricultural strategy which gave rise to Green Revolution?

- A Third Five-Year Plan
- B Second Five-Year Plan
- C Fourth Five-Year Plan
- D Sixth Five-Year Plan

Answer: C

Question 3

Compare the weight of an object on the Moon and the weight of it on the Earth.

- A The object weighs its original weight on the Earth and its weight is Zero on the Moon
- B The object weighs more on the Moon than on the Earth
- C The object weighs lesser on the Moon than on the Earth
- D The object weighs the same on the Moon and on the Earth

Answer: C

Question 4

Which city in Uttar Pradesh is famous for 'Glass Bangles' industry?

- A Moradabad
- B Aligarh
- C Agra
- D Firozabad

Answer: D

Question 5

The cell body of a neuron is called-

- A Perikaryon
- B Soma
- C Dendron
- D Schwann cell

Answer: B

Question 6

Find the ODD one out from the given options.

- A H
- B N
- C K
- D Z

Answer: C

Explanation:

Conversion Table

A = 1	K = 11	U = 21
B = 2	L = 12	V = 22
C = 3	M = 13	W = 23
D = 4	N = 14	X = 24
E = 5	O = 15	Y = 25
F = 6	P = 16	Z = 26
G = 7	Q = 17	
H = 8	R = 18	
I = 9	S = 19	
J = 10	T = 20	

H=8, K=11, N=14 and Z=26.

So, other than K each letter carries even values.

C is correct choice.

Question 7

Fort William in India is located on the river banks of-

- A Chenab
- B Hooghly
- C Godavari
- D Yamuna

Answer: B

Question 8

A goods train runs at a speed of 72 km/hr and crosses a 250 m long platform in 26 seconds. What is the length of the goods train?

- A 230 m
- B 240 m
- C 260 m
- D 270 m

Answer: D

Explanation:

$$\text{Trains speed} = 72 \frac{\text{km}}{\text{h}} = \frac{72000}{3600} = 20 \frac{\text{m}}{\text{s}}.$$

So, in 26 sec, it will cover = $26 \times 20 \text{ m} = 520 \text{ m}$.

It covers platform's length and train's length in 26 secs.

$$\text{So, Trains length} = (520 - 250) = 270 \text{ m}.$$

D is correct choice.

Question 9

In two similar triangles, ratio of their corresponding sides is 1 : 3 and the area of the larger triangle is 72 cm^2 . then find the area of the smaller triangle.

- A 8 cm^2
- B 14 cm^2
- C 18 cm^2
- D 9 cm^2

Answer: A

Explanation:

Let say, area of larger triangle = Δ_1 and area of smaller triangle is Δ_2 .

$$\text{So, } \frac{\Delta_1}{\Delta_2} = \left(\frac{3}{1}\right)^2 = 9.$$

$$\text{So, } \frac{72}{\Delta_2} = 9.$$

$$\text{or, } \Delta_2 = 8.$$

A is correct choice.

Question 10

On which of the following factors, does the frictional force on an object in a fluid depend upon?

- A Nature of the fluid
- B Shape of the object
- C Speed with respect to the fluid
- D All of the options

Answer: D

Question 11

Find the wrong number in the given series.

428, 413, 398, 384, 368, 353

A 398

B 384

C 428

D 353

Answer: B

Explanation:

$428 - 15 = 413$, $413 - 15 = 398$, $398 - 15 = 383$, $383 - 15 = 368$, $368 - 15 = 353$.

B is correct choice.

Question 12

Which number will best complete the relationship given below ?

7 : 350 :: 8 : ?

A 540

B 530

C 510

D 520

Answer: D

Explanation:

$7 : 350 \Rightarrow 7^3 + 7 = 343 + 7 = 350$.

$8 : 520 \Rightarrow 8^3 + 8 = 512 + 8 = 520$.

D is correct choice.

Question 13

Which of the following describes how electrons are put into orbitals in a particular order for filling?

A Aufbau principle

B Pauli's exclusion principle

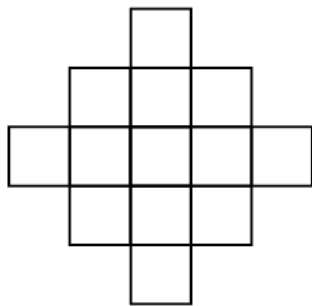
C Hund's rule

D Wiswesser rule

Answer: A

Question 14

How many squares are there in the given figure ?



- A 18
- B 16
- C 15
- D 10

Answer: A

Explanation:

Total number of small squares = 13.

1 large square is there in the middle.

And, medium small size square = 4.

So, total number of squares = $13+1+4=18$.

A is correct choice.

Question 15

_____ can fix nitrogen from air on its own.

- A Maize
- B Legumes
- C Wheat
- D Tubers

Answer: B

Question 16

16 January 2007 was Tuesday. What day of the week was 16 January 2008?

- A Monday
- B Tuesday
- C Sunday
- D Wednesday

Answer: D

Explanation:

Year 2008 is a leap year.

So, It will be a year of 366 days.

So, 16 January 2008 will be on Wednesday, as their will be on extra day will count.

D is correct choice.

Question 17

Ages of a brother and sister are in the ratio 4 : 3. After 3 years, the sister will be twice as old as she is now. How old is the brother now?

A 4 years

B 8 years

C 6 years

D 12 years

Answer: A

Explanation:

Let say, Brother's age is $4k$ and Sister's age is $3k$.

According to question,

$$6k = 3k + 3$$

or, $k = 1$.

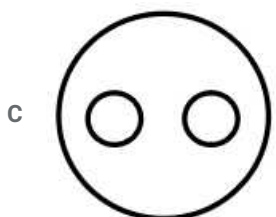
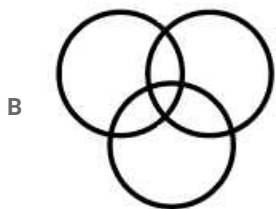
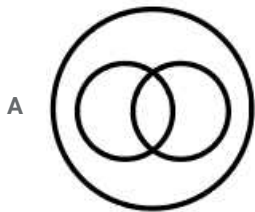
So, Brother is 4 year old.

A is correct choice.

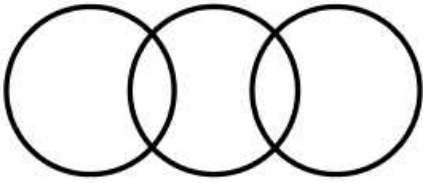
Question 18

Choose the figure that best represents the relationship among the classes given below.

Oil, Wick, Lamp



D



Answer: C

Explanation:

Oil and Wick are used to light up a lamp.

So, they belong to Lamp equipment.

C is correct choice.

Question 19

Escherichia coli occurs in -

A Water

B Soil

C Milk

D Intestine of man

Answer: D

Question 20

Ragu walks straight from his home to reach a busstop. After walking for some distance, he turns left and reaches the bus stop which is in the east. Find the direction of the bus stop from his home ?

A South east

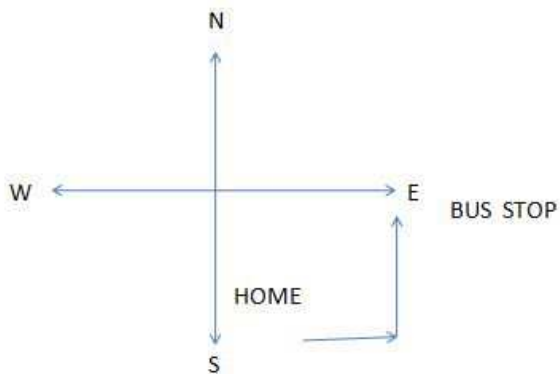
B North east

C North west

D South west

Answer: A

Explanation:

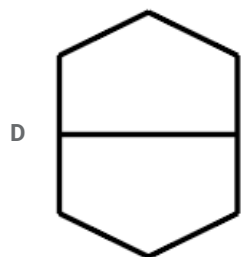
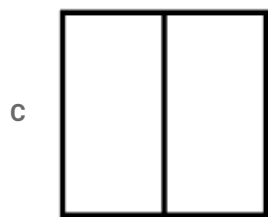
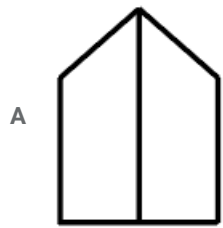


So, His home is in South-East direction.

A is correct choice.

Question 21

Find the ODD one out from the given options.



Answer: D

Explanation:

Image in A,B and C : a straight line is added in middle from up to bottom.

But in Image D , a flat line is added to the center.

D is correct choice.

Question 22

Which of the following countries has received the ICC Test Championship mace for third consecutive year on April 1, 2019?

A Australia

B India

C South Africa

D England

Answer: B

Question 23

Out of 5 cards with numbers 1, 2, 3, 4, 5, two are picked at random one after the other. What is the probability that the number in the second card is odd?

A $\frac{3}{4}$

B $\frac{3}{10}$

C $\frac{1}{6}$

D $\frac{3}{5}$

Answer: D

Explanation:

He can pick any card in $5 \times 4 = 20$ number of ways.

But he can pick an odd numbered card in second attempt by { (1, 3), (1, 5), (2, 1), (2, 3), (2, 5), (3, 1), (3, 5), (4, 1), (4, 3), (4, 5), (5, 1), (5, 3) } :

12 different ways.

So, required probability = $\frac{12}{20} = \frac{3}{5}$.

D is correct choice.

Question 24

Which branch of Zoology is closely related to the study of Sociology of Human race ?

A Anthropology

B Physiology

C Embryology

D Zoogeography

Answer: A

Question 25

If 'BROTHER' is coded as 86, 'FATHER' is coded as 58 and 'SISTER' is coded as 90, then how will 'MOTHER' be coded in that language?

A 73

B 83

C 52

D 79

Answer: D

Explanation:

Conversion Table

A = 1	K = 11	U = 21
B = 2	L = 12	V = 22
C = 3	M = 13	W = 23
D = 4	N = 14	X = 24
E = 5	O = 15	Y = 25
F = 6	P = 16	Z = 26
G = 7	Q = 17	
H = 8	R = 18	
I = 9	S = 19	
J = 10	T = 20	

BROTHER = $2 + 18 + 15 + 20 + 8 + 5 + 18 = 86$.

FATHER = $6 + 1 + 20 + 8 + 5 + 18 = 58$.

SISTER = $19 + 9 + 19 + 20 + 5 + 18 = 90$.

So, MOTHER = $13 + 15 + 20 + 8 + 5 + 18 = 79$.

D is correct choice.

Question 26

To test for divisibility of a number by 24, we should test the divisibility of the number by

- A 8
- B 3
- C 4 and 12
- D Both 8 and 3

Answer: D

Explanation:

$$24 = 2^3 \times 3 = 8 \times 3.$$

To test for divisibility of a number by 24, we should test the divisibility of the number by 8 and 3.

D is correct choice.

Question 27

In which of the following sports is the word 'libero' used?

- A Volleyball
- B Softball
- C Basketball
- D Handball

Answer: A

Question 28

The white liquid that oozes out of wounds is called-

- A Paste
- B Plasma

- C Pus
- D Saliva

Answer: C

Question 29

$PbO_2 + 4HCl \rightarrow PbCl_2 + 2H_2O + Cl_2$, the substance undergoing oxidation is _____.

- A Lead chloride
- B Lead dioxide
- C Hydrochloric acid
- D Hydrogen

Answer: C

Question 30

Find the wrong number in the following series.

3, 6, 12, 27, 48, 96

- A 6
- B 27
- C 12
- D 48

Answer: B

Question 31

Earth belongs to which type of celestial body?

- A Star
- B Comet
- C Planet
- D Satellite

Answer: C

Question 32

In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1) All books are toys.
- 2) No toy is black.

Conclusions:

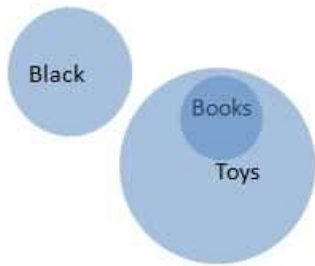
- I. No book is black.
- II. Some books are black.

- A Only conclusion II follows
- B Neither conclusion I nor II follows
- C Only conclusion I follows
- D Both conclusions I and II follow

Answer: C

Explanation:

From the given statements we can infer following image :



So, No Book is Black only possible conclusion.

C is correct choice.

Question 33

By selling an article, Madan earned a profit equal to one-fourth of the price he bought it. If he sold it for Rs.375, what was the cost price?

- A Rs.350
- B Rs.312.50
- C Rs.281.75
- D Rs.300

Answer: D

Explanation:

Let the cp be rs. x

then profit = $x/4$

sp = rs.375

profit = SP-CP

$x/4 = 375 - x$

$x/4 + x = 375$

$5x/4 = 375$

$x = 375 * 4/5$

$x = 300$

hence CP = rs. 300

D is correct choice.

Question 34

A set-up of having a large number of wind turbines working at a place to generate electrical energy on a large scale is called a-

- A Farm house

- B Wind energy farm
- C Turbine farm
- D Electrical farm

Answer: B

Question 35

Which of the following mobile apps won the Digital India Award 2018 under Best Mobile App category ?

- A Skill Pill
- B Moodle Mobile
- C ePathshala
- D E.Learning Age

Answer: C

Question 36

Which number will best complete the relationship given below?

4 : 64 :: 6 : ?

- A 187
- B 216
- C 223
- D 219

Answer: B

Explanation:

$4 : 64 \Rightarrow 4^3 = 64.$ and $6 : 216 \Rightarrow 6^3 = 216.$

B is correct choice.

Question 37

In which of the following states of India is Sriharikota situated ?

- A Arunachal Pradesh
- B Tamil Nadu
- C Bihar
- D Andhra Pradesh

Answer: D

Question 38

Dendrimers are nano-sized, radially symmetric molecules used in-

- A Health and pharmaceutical industry
- B Telecommunication industry
- C Defence industry
- D Automobile industry

Answer: A

Question 39

A contractor under takes to repair roads with 120 men in 124 days. After 64 days, as $\frac{2}{3}$ of the work has been over already. He withdraws some men as surplus. If the work is completed in time, how many men were removed ?

- A 56
- B 72
- C 40
- D 64

Answer: A

Explanation:

Part of the work completed in 64 days = $\frac{2}{3}$

Part of the work completed in 32 days = $\frac{1}{3}$

Remaining work = $\frac{1}{3}$

$\frac{1}{3}$ of the work can be completed in 32 days by 120 men

How many men can complete $\frac{1}{3}$ of the work in 60 days?

$$32:60 = x:120$$

$$x = (32 \times 120) / 60$$

$$x = 64$$

64 men can complete $\frac{1}{3}$ of the work in 60 days.

$$120 - 64 = 56$$

Therefore, 56 men have to be removed to complete the remaining work in 60 days.

A is correct choice.

Question 40

Where did the first battle of Panipat take place?

- A Jammu and Kashmir
- B Haryana
- C Punjab
- D Rajasthan

Answer: B

Question 41

Which of these is NOT fought with bare palms?

- A Karate
- B Boxing
- C Judo
- D Wrestling

Answer: B

Question 42

In periodic table, valence electrons are indicated by-

- A Period number
- B Group number
- C Shell number
- D Atomic mass

Answer: B

Question 43

Pipes P and Q can fill a tank in 20 and 16 hours respectively. Pipe Q alone was opened for $\frac{1}{4}$ of time and later P also was opened. In how many hours was the tank filled?

- A 16 hours
- B 10 hours
- C 18 hours
- D 12 hours

Answer: B

Explanation:

Let the required time be x hours.

then Pipes, P & Q :

$$\Rightarrow x/16 + 3x/80 = 1$$

$$\Rightarrow 8x/80 = 1$$

$$\Rightarrow x = 10 \text{ hours.}$$

B is correct choice.

Question 44

The sum of the digits of a two-digit number is 9 less than the number. Which of the following digits is at ten's place of the number ?

- A 2

B 4

C 5

D 1

Answer: D

Explanation:

Let say, the number is 'ab'.

So, $ab = 10a + b$.

According to question,

$a + b = 10a + b - 9$.

or, $a = 1$.

So, digit in ten's place is 1.

D is correct choice.

Question 45

Two numbers are in the ratio 4 : 5 and their LCM is 100. What is their difference?

A 25

B 5

C 20

D 10

Answer: B

Explanation:

Let say, two numbers are $4k$ and $5k$.

So, $\text{LCM}(4k, 5k) = 20k$.

So, $20k = 100$.

or, $k = 5$.

So, Numbers are 20 and 25.

Their difference is 5.

B is correct choice.

Question 46

In which type of waves do the vibrations move parallel to the direction of travelling of wave ?

A Transverse

B Longitudinal

C Surface

D Microwaves

Answer: B

Question 47

P and Q run around a circular track of 240 m at 15 m/min and 20 m/min speeds respectively. If they start running simultaneously, after what time will they meet again at the starting point?

- A 30 minutes
- B 25 minutes
- C 36 minutes
- D 48 minutes

Answer: D

Explanation:

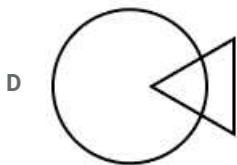
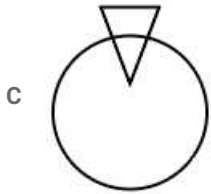
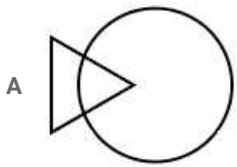
Their relative speed is $= (20 - 15) \frac{m}{min} = 5 \frac{m}{min}$.

So, They will meet at starting point after $\frac{240}{5} \text{ min} = 48 \text{ min}$.

D is correct choice.

Question 48

Find the ODD one out from the given options.



Answer: B

Explanation:

One of the cone of each triangle is partly overlapped with Circle in each diagram A,C and D .

But diagram in B is different from these options.

B is correct choice.

Question 49

Find the least number that should be added to 2497 so that the sum is divisible by 5, 6, 4 and 3.

- A 23
- B 33
- C 37
- D 13

Answer: A

Explanation:

$$LCM(5, 6, 4, 3) = 5 \times 4 \times 3 = 60.$$

So, A number is divisible by 5, 6, 4 and 3 if only it is in = $60k$ (where k is any integer) form.

If we put, $k=42$, $60k = 60 \times 42 = 2520$.

So, A least number $(2520 - 2497) = 23$ should be add.

A is correct choice.

Question 50

Covalent bonds are formed by the between two atoms.

- A Transfer of protons
- B Transfer of electrons
- C Sharing of electrons
- D Sharing of protons

Answer: C

Question 51

Every positive integer > 0 can be expressed as a product of $2^n (n \geq 0)$ and another _____.

- A Prime number
- B Odd number
- C Both Even number and Prime number
- D Even number

Answer: B

Explanation:

Every positive integer > 0 can be expressed as a product of $2^n (n \geq 0)$ and another odd number (or odd numbers).

Likewise :

$$28 = 2^2 \times 7.$$

$$69 = 2^0 \times 3 \times 23.$$

So, B is correct choice.

Question 52

What is the chemical symbol for Sulphur ?

- A Su
- B Se
- C S
- D Si

Answer: C

Question 53

A submarine emits a SONAR pulse which returns from an under water cliff in 2 s. If the speed of sound in sea water is 1500 m/s, how far away is the cliff?

- A 4000 m
- B 1500 m
- C 3000 m
- D 2000 m

Answer: B

Question 54

Which of the following cities was named the best city to live in India for the fifth consecutive year ?

- A Delhi
- B Chennai
- C Bengaluru
- D Hyderabad

Answer: D

Question 55

Which of the following statements are sufficient to find the age of A if:

- (i) The ratio of A and B's ages was 2 : 1 five years back.
- (ii) The ratio of age at present is 11 : 6.
- (iii) The ratio of age 20 years back was 7 : 2.

- A Any two of statements (i), (ii) and (iii)
- B Statement (i) only
- C Statement (iii) only
- D Statement (ii) only

Answer: A

Explanation:

If we take :

- (i) The ratio of A and B's ages was 2 : 1 five years back.
- (ii) The ratio of age at present is 11 : 6.

$$\begin{aligned} A_{\text{present age}-5} &= 2 \\ B_{\text{present age}-5} &= 1 \end{aligned}$$

or, $A_{\text{present age}} - 5 = 2B_{\text{present age}} - 10$

or, $A_{\text{present age}} - 2B_{\text{present age}} = 5 - 10 = -5 \dots \dots \dots (1)$

And, $\frac{A_{\text{present age}}}{B_{\text{present age}}} = \frac{11}{6} \dots \dots \dots (2)$

So, By solving (1) and (2) we can get their ages.

If we take :

(ii) The ratio of age at present is 11 : 6.

(iii) The ratio of age 20 years back was 7 : 2.

$$\frac{A_{\text{present age}}}{B_{\text{present age}}} = \frac{11}{6} \dots \dots \dots (1)$$

And, $\frac{A_{\text{present age}-20}}{B_{\text{present age}-20}} = \frac{7}{2} \dots \dots \dots (2)$

By solving (1) and (2) we can get their ages.

If we take :

(i) The ratio of A and B's ages was 2 : 1 five years back.

(iii) The ratio of age 20 years back was 7 : 2.

$$\frac{A_{\text{present age}-20}}{B_{\text{present age}-20}} = \frac{7}{2} \dots \dots \dots (1)$$

$$\frac{A_{\text{present age}-5}}{B_{\text{present age}-5}} = \frac{2}{1} \dots \dots \dots (2)$$

By solving (1) and (2) we can get their ages.

So, A is correct choice.

Question 56

The backbone is also known as-

- A Ribs
- B Thorax
- C Spine
- D Femur

Answer: C

Question 57

Which of these representations does NOT indicate changes over a period of time ?

- A Bar graphs
- B Frequency polygon
- C Histogram
- D Pie chart

Answer: D

Question 58

If in a certain language 'EXIST' is coded as 'ESIXT', how is 'PLUTO' coded in that language ?

- A PULTO
- B PTULO
- C OLUTP
- D PTUOL

Answer: B

Explanation:

Letters in 2nd and 4th place have been interchanged in the code 'EXIST'.

Similarly, PLUTO = PTULO.

B is correct choice.

Question 59

In a certain code, 'ABC DEF' is written as 'ZYX WVU'. How would 'PASS' be written in that code?

- A WZHH
- B KHZZ
- C KZHH
- D KMHH

Answer: C

Explanation:

Conversion Table

A = 1	K = 11	U = 21
B = 2	L = 12	V = 22
C = 3	M = 13	W = 23
D = 4	N = 14	X = 24
E = 5	O = 15	Y = 25
F = 6	P = 16	Z = 26
G = 7	Q = 17	
H = 8	R = 18	
I = 9	S = 19	
J = 10	T = 20	

ABC DEF :: ZYX WVU ==>

$A + Z = 1 + 26 = 27$, $B + Y = 2 + 25 = 27$, $C + X = 3 + 24 = 27$, $D + W = 4 + 23 = 27$, $E + V = 5 + 22 = 27$, $F + U = 6 + 21 = 27$.

Similarly,

PASS = KZHH.

C is correct choice.

Question 60

A sector of a circle of radius 21 cm and central angle 120° is folded into a cone. Radius of the cone thus obtained is:

- A 7 cm
- B 21 cm
- C 42 cm

D 7.5 cm

Answer: A

Explanation:

$$\text{Circumference of Circle} = 2\pi r = 2 \times \frac{22}{7} \times 21 = 132 \text{ cm.}$$

$$\text{So, Circumference of the sector is} = \left(\frac{120}{360} \times 132\right) \text{ cm} = 44 \text{ cm.}$$

This is the circumference of base of the Cone extracted .

$$\text{So, } 2 \times \frac{22}{7} \times r_{\text{cone}} = 44 .$$

$$\text{or, } r_{\text{cone}} = 7 \text{ cm.}$$

A is correct choice.

Question 61

Which of the following will best complete the relationship given below ?

RPM : IGD :: XVS : ?

A NIL

B ILN

C OMJ

D JMO

Answer: C

Explanation:

$$RPM : IGD \Rightarrow M + 3 = P, P + 2 = R \text{ and } D + 3 = G \text{ and } G + 2 = I.$$

Similarly,

$$SVX : OMJ. (OMJ \Rightarrow J + 3 = M, M + 2 = O.)$$

C is correct choice.

Question 62

On a certain sum, the Compound Interest and Simple Interest at some rate per cent are Rs.696.30 and Rs.660 respectively in 2 years. Find the sum.

A Rs.3600

B Rs.4000

C Rs.3300

D Rs.3000

Answer: D

Explanation:

Let say , sum is P and rate of interest is r %.

$$\text{So, } P \times 2 \times \frac{r}{100} = 660.$$

$$\text{So, } \frac{Pr}{100} = 330 \dots \dots \dots (1)$$

$$\text{And, } P \left(1 + \frac{r}{100}\right)^2 - P = 696.30$$

$$\text{or, } P \left(1 + \frac{r^2}{100^2} + \frac{2r}{100} - 1 \right) = 696.30$$

$$\text{or, } 100 \cdot \frac{r}{100} + \frac{2Pr}{100} = 696.30$$

$$\text{or, } 330 \cdot \frac{r}{100} + 2 \times 330 = 696.30$$

$$\text{or, } 330 \cdot \frac{r}{100} = 36.30$$

$$\text{or, } \frac{r}{100} = \frac{36.30}{330} = 0.11$$

$$\text{or, } r = 11.$$

Put this value in (1) :

$$\frac{11P}{100} = 330$$

$$\text{or, } P = 3000.$$

D is correct choice.

Question 63

In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1) Some players are spectators.
- 2) No player is a theatre.

Conclusions:

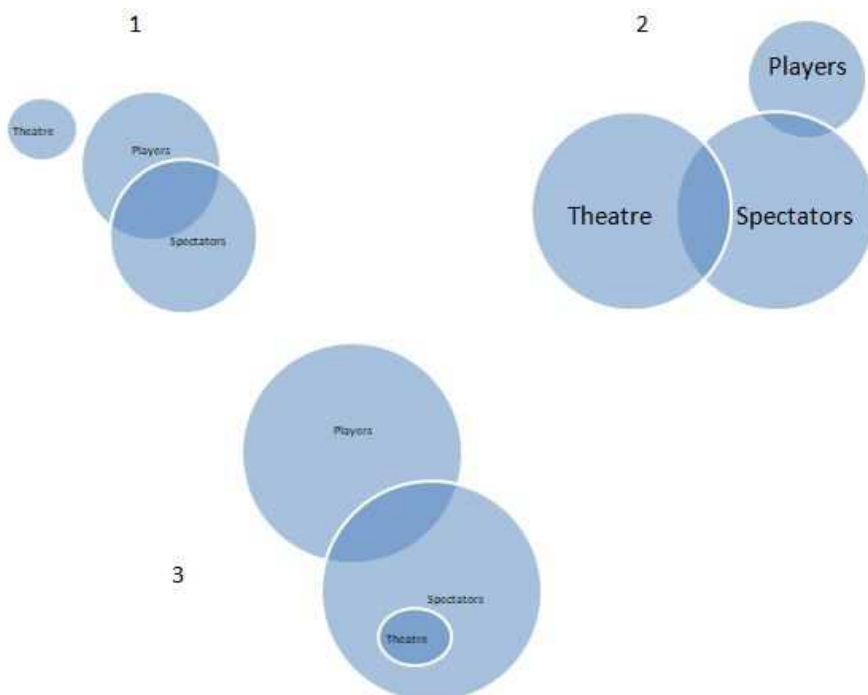
- I. No spectators are theatres.
- II. All spectators being theatres is a possibility.

- A Both conclusions I and II follow
- B Only conclusion II follows
- C Neither conclusion I nor II follows
- D Only conclusion I follows

Answer: C

Explanation:

From above statements We can infer the following diagram :



So, none of the conclusion can be extract .

So, C is correct choice.

Question 64

Simplify: $8\frac{1}{3} \div 3 - \frac{1}{10}$ of $2\frac{1}{2} + \frac{17}{4}$

A 9

B 1

C $\frac{7}{2}$

D $\frac{5}{4}$

Answer: A

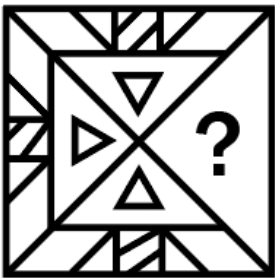
Explanation:

$$\begin{aligned}
 &8\frac{1}{3} \div 3 - \frac{1}{10} \text{ of } 2\frac{1}{2} + \frac{17}{4} \\
 &= \frac{25}{3} \div 3 - \frac{1}{10} \text{ of } \frac{5}{2} + \frac{17}{4} \\
 &= \frac{25}{3} \times \frac{3}{5} - \frac{1}{4} + \frac{17}{4} \\
 &= 5 - \frac{1}{4} + \frac{17}{4} \\
 &= -\frac{1}{4} + \frac{20+17}{4} \\
 &= \frac{-1+37}{4} \\
 &= \frac{36}{4} \\
 &= 9.
 \end{aligned}$$

A is correct choice.

Question 65

Choose from the alternatives the figure that best completes the pattern given below.





Answer: C

Explanation:

If we rotate the image in option C clockwise onetime, we will get the rest of the part of image.

C is correct choice.

Question 66

Which mirror is used in a solar furnace?

- A Convex mirror
- B Plane mirror
- C Concave mirror
- D Spherical mirror

Answer: C

Question 67

If the potential difference across the ends of a conductor is doubled, what happens to the current flowing through it ?

- A It gets doubled
- B It gets halved
- C It gets quadrupled
- D It gets decreased

Answer: A

Question 68

Which of the following bird's egg is the smallest?

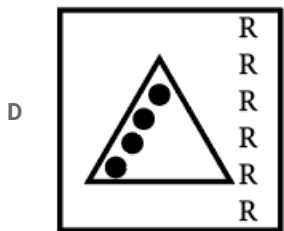
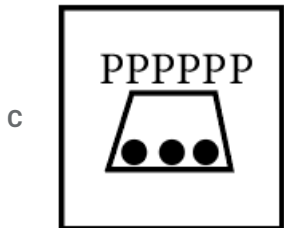
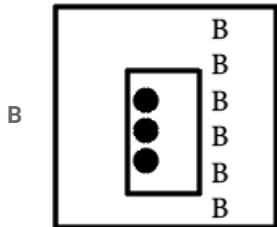
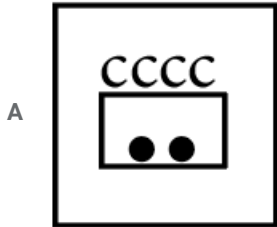
- A Hummingbird

- B Swallow
- C Nightingale
- D Sparrow

Answer: A

Question 69

Find the ODD one out from the given options.



Answer: D

Explanation:

The inside shape is a four side shape.

But shape inside of the Square in image D is a triangle (it is different from other options)

D is correct choice.

Question 70

If $\frac{(x-y)}{5} = \frac{(y-z)}{3} = \frac{(z-x)}{2}$, then which of these is TRUE?

- A $x^2 + y^2 + z^2 = 2xyz$
- B $x = y = z$
- C $xyz = 30$

D $x + y + z = 0$

Answer: B

Explanation:

$$\frac{(x-y)}{5} = \frac{(y-z)}{3} = \frac{(z-x)}{2}$$

$$3(x - y) = 5(y - z).$$

$$\text{or, } 3x - 3y = 5y - 5z$$

$$\text{or, } 8y = 3x + 5z \dots \dots \dots (1)$$

Again,

$$\frac{y-z}{3} = \frac{z-x}{2}$$

$$\text{or, } 2y - 2z = 3z - 3x$$

$$\text{or, } 2y + 3x = 5z. \text{ Put this value in (1)}$$

$$8y = 2y + 3x + 3x.$$

$$\text{or, } 6y = 6x.$$

$$\text{or, } y = x.$$

So, we can say that ,

$$\frac{x-x}{5} = \frac{z-x}{2} \text{ (Given equation)}$$

$$\text{or, } \frac{z-x}{2} = 0.$$

$$\text{or, } x = z.$$

$$\text{so, } x = y = z.$$

B is correct choice.

Question 71

What constitutes the major part of the human body?

- A Fat
- B Water
- C Proteins
- D Plasma

Answer: B

Question 72

A man sold 18 cots for Rs.16800, gaining there by the cost price of 3 cots. Find the cost price of a cot.

- A Rs.650
- B Rs.750
- C Rs.700
- D Rs.800

Answer: D

Explanation:

No of cots = 18

Gain = 3 cots.

% percentage gain = $(3 * 100) / 18 = 16.66\%$.

Let X would be the CP of 18 cots.

So,

SP = X + 16.66% of X

$1.166X = 16800$

$X = 14400$. (Approx.)

CP per cot = $144000 / 18 = \text{Rs. } 800$.

D is correct choice.

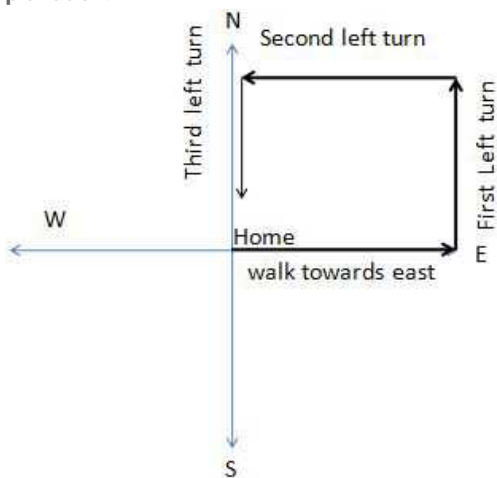
Question 73

Dinesh walked 6 km towards east from his home and took three times left turn. Which direction he is facing now?

- A South
- B East
- C North
- D West

Answer: A

Explanation:



So, He is facing Southward.

A is correct choice.

Question 74

If $296 = x\%$ of 3700, then what is the value of 'x'?

- A 8
- B 11
- C 10

D 13

Answer: A

Explanation:

$$x\% \text{ of } 3700 = 296.$$

$$\text{or, } x\% = \frac{296}{3700} = 0.08.$$

$$\text{or, } x = 8\%.$$

A is correct choice.

Question 75

If $\sqrt{7} = 2.6457$ and $\sqrt{3} = 1.732$, then find the value of $\frac{1}{\sqrt{7}-\sqrt{3}}$

A 1.0844

B 1.944

C 1.0944

D 1.009

Answer: C

Explanation:

$$\frac{1}{\sqrt{7}-\sqrt{3}} = \frac{\sqrt{7}+\sqrt{3}}{7-3} = \frac{1}{4} (\sqrt{7} + \sqrt{3}) = \frac{1}{4} (2.6457 + 1.732) = 1.0944.$$

C is correct choice.

Question 76

Find the missing number in the following series.

2, 4, 3, (...), 5, 10

A 9

B 4

C 6

D 7

Answer: C

Explanation:

It's an alternate series of 2,3,5 and 4,6,10.

Where, $2 + 3 = 5$ and $4 + 6 = 10$.

C is correct choice.

Question 77

Which of the following is basic in nature?

A H_2SO_4

B $NaOH$

C HCl

D HNO_3

Answer: B

Question 78

What is the scattering of light by particles in its path called as?

A C.V Raman effect

B Light effect

C Newton effect

D Tyndall effect

Answer: D

Question 79

One day Rajesh left home and cycled 10 km southwards, and then he turned right and cycled 5 km; again he turned right and cycled 10 km. Then again he turned left and cycled 10 km to reach point P. How many kilometers will he have to cycle to reach his home straight from point P?

A 25 km

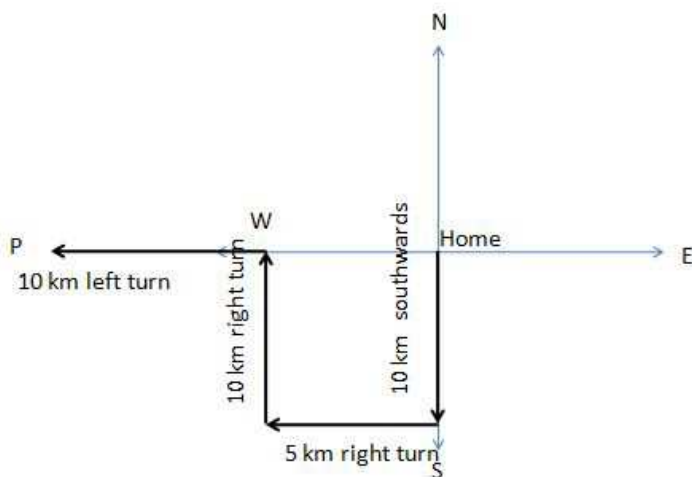
B 20 km

C 10 km

D 15 km

Answer: D

Explanation:



So, He had to walk for
 $(10+5)=15$ km to reach
point P from Home.

D is correct choice.

Question 80

The ratio of Simple Interest earned by equal amounts in two different schemes at the same rate for 6 years and 10 years respectively is:

- A 3 : 4
- B 3 : 5
- C 4 : 3
- D 4 : 5

Answer: B

Question 81

In this question, a statement is given followed by three conclusions. Choose the conclusion(s) which best fit(s) logically.

Statement:

$$J \geq E > K = T; D \leq E$$

Conclusions:

- I. $J > D$
- II. $J \geq D$
- III. $E > T$

- A Only conclusion I is true
- B Only conclusion I and III are true
- C Only conclusion I and II are true
- D Only conclusions II and III are true

Answer: D

Explanation:

$J \geq E$ and $E \geq D$ implies that $J \geq D$.

And, $E > K = T$ implies that $E > T$.

So, D is correct choice.

Question 82

What is the chemical formula of Plaster of Paris?

- A $CaSO_4$
- B $CaSO_4 \cdot 2H_2O$
- C $CaSO_4 \cdot \frac{1}{2}H_2O$
- D $CaSO_4 \cdot H_2O$

Answer: C

Question 83

Express 5.025 as a fraction:

A $5\frac{1}{4}$

B $\frac{203}{40}$

C $5\frac{1}{40}$

D $5\frac{1}{8}$

Answer: C

Explanation:

$$5.025 = 5 + 0.025 = 5 + \frac{25}{1000} = 5 + \frac{1}{40} = 5\frac{1}{40}.$$

C is correct choice.

Question 84

Read the following information carefully and answer the question given below.

Eight friends-P, Q, R, S, T, U, V and W are sitting around a square table in such a way that four of them sit at four corners of the square while four sit in the middle of each of the four sides. The ones who sit at the four corners face the center while those who sit in the middle of the sides face outside. P, who faces the center, sits third to the right of U. T, who faces the center, is not an immediate neighbour of U. Only one person sits between U and V. S sits second to the right of Q. Q faces the center. R is not an immediate neighbour of P. Who among the following is facing outside ?

A S

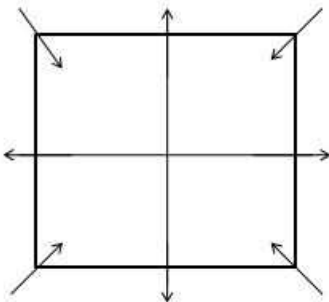
B Q

C P

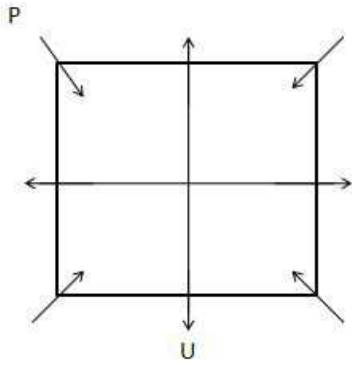
D V

Answer: D

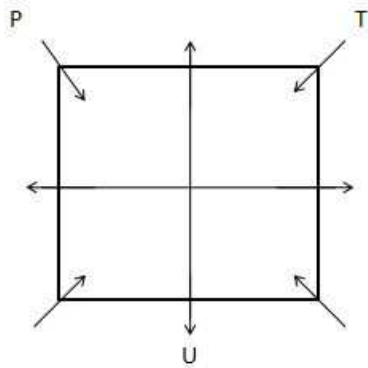
Explanation:



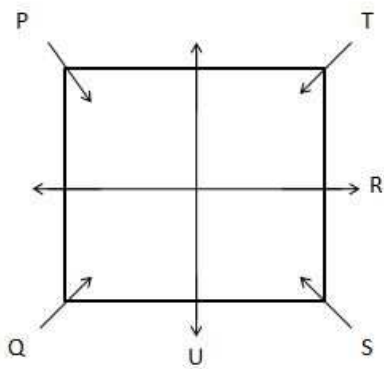
The ones who sit at the four corners face the center while those who sit in the middle of the sides face outside.



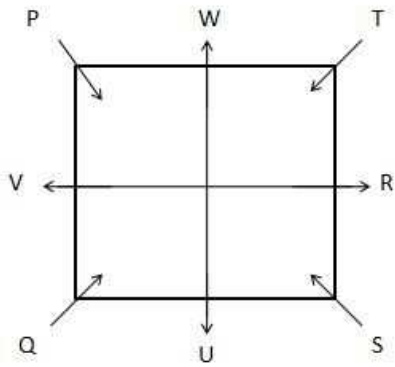
P, who faces the center, sits third to the right of U.



T, who faces the center, is not an immediate neighbour of U.



S sits second to the right of Q. Q faces the center. Means that Q is immediate right of U. R is not an immediate neighbour of P. So, R is between S and T.



Only one person sits between U and V.

V is facing outside.

D is correct choice.

Question 85

'Protection of Life And Personal Liberty' comes under the Article of the Indian Constitution.

- A 20
- B 21
- C 19
- D 22

Answer: B

Question 86

A pipe is 3 times faster than another pipe Q and takes 32 minutes less than pipe to fill a cistern. In what time will the cistern be full if both pipes are opened together?

- A 8 minutes
- B 10 minutes
- C 12 minutes
- D 6 minutes

Answer: C

Explanation:

Let pipe A takes p min to fill

Then,

pipe Q takes 3p min to fill

$$\Rightarrow 3p - p = 32$$

$$\Rightarrow p = 16 \text{ min} \Rightarrow 3p = 48 \text{ min}$$

$$\text{Required, both pipes to fill} = (48 \times 16)/(48 + 16) \text{ min} = 12 \text{ min.}$$

C is correct choice.

Question 87

Each side of a square is increased by 20%. What is the percentage change in area?

- A 400%
- B 48%
- C 20%
- D 44%

Answer: D

Explanation:

Let say, side of square is a .

So, Area of Square before increase = a^2 .

After increase of side area become = $1.2a \times 1.2a = 1.44a^2$.

So, Percentage change in area is = $\frac{(1.44a^2 - a^2)}{a^2} = 0.44$ or 44%.

D is correct choice.

Question 88

Read the following information carefully and answer the question given below.

Eight friends—D, E, F, G, H, I, J and K are sitting around a circular table facing the centre. Each one of them likes different brands of bikes—Yamaha, TVS, Royal Enfield, Jawa, Harley-Davidson, Bajaj, Honda and Suzuki, but not necessarily in the same order.

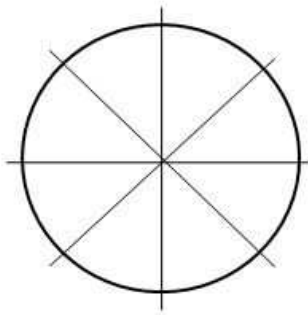
D sits third to the right of the person who likes Suzuki. D does not like Royal Enfield. H is not an immediate neighbour of K. F sits on the immediate right of the person who likes Royal Enfield. Neither D nor K likes Harley-Davidson or a TVS. The person who likes Harley-Davidson is not an immediate neighbour of the person who likes Suzuki. The person who likes Yamaha sits immediate left of H. The person who likes Yamaha is an immediate neighbour of the both persons who like Bajaj and Honda. Person who likes Honda sits fourth to the right of E. E does not like Harley-Davidson. I is not an immediate neighbour of D. J is not an immediate neighbour of the person who likes Yamaha and Suzuki. Only two people sit between the person who likes Honda and K. The persons who like Harley-Davidson and the TVS are immediate neighbours of each other.

Which of the following is CORRECTLY matched?

- A H - TVS
- B E - Jawa
- C J - Harley-Davidson
- D D - Bajaj

Answer: C

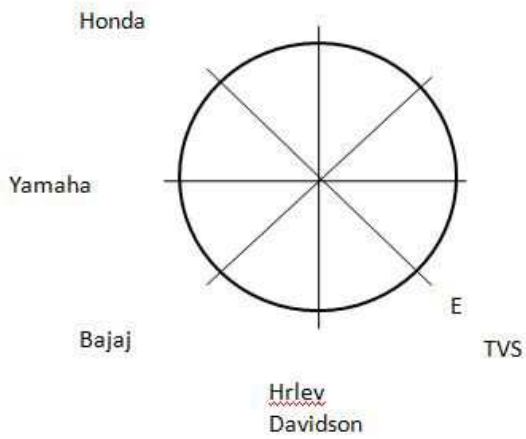
Explanation:



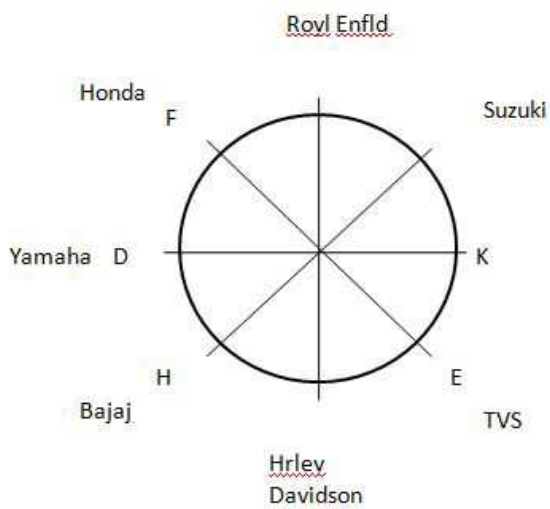
TVS

Harley
Davidson

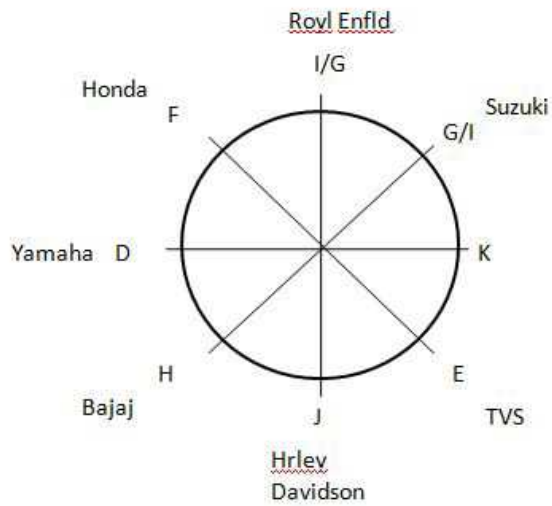
The persons who like Harley-Davidson and the TVS are immediate neighbours of each other.



Person who likes Honda sits fourth to the right of E.



D sits third to the right of the person who likes Suzuki. D does not like Royal Enfield. F sits on the immediate right of the person who likes Royal Enfield.



J is not an immediate neighbour of the person who likes Yamaha and Suzuki.

So, J- Harley-Davidson.

C is correct choice.

Question 89

What does phototropism mean?

- A Union between unequal gametes
- B Movement of plants towards light
- C Movement of the plant towards water and moisture
- D Specialised protoplasm from which arises a cilia

Answer: B

Question 90

Which of these tennis tournaments is a team event?

- A Australian Open
- B Davis Cup
- C Wimbledon
- D German Open

Answer: B

Question 91

Simplify: $16.5 - 16.5 \div 2.2 + 3 \times 5$

- A 22.5
- B 33

C 12.25

D 24

Answer: D

Explanation:

$$16.5 - 16.5 \div 2.2 + 3 \times 5$$

$$= 16.5 - 7.5 + 3 \times 5$$

$$= 16.5 - 7.5 + 15$$

$$= 31.5 - 7.5$$

$$= 24.$$

So, D is correct choice.

Question 92

The length of a rectangular plot is 20 m more than its breadth. If the cost of fencing the plot at Rs.26.50 per metre is Rs.5300, what is the length of the plot in metres ?

A 120 m

B 40 m

C 60 m

D 50 m

Answer: C

Explanation:

Let say, Breadth is b .

So, Length = $(b+20)$.

So, Perimeter of rectangular plot is $= 2(b + 20 + b) = (4b + 40) m$.

$$\text{So, } (4b + 40) \times 26.50 = 5300$$

$$\text{or, } 4b + 40 = \frac{5300}{26.5} = 200.$$

$$\text{or, } b + 10 = 50.$$

$$\text{or, } b = 40.$$

So, Length is 60 m.

C is correct choice.

Question 93

What is the minimum age required to be the President of India?

A 40 Years

B 37 years

C 35 Years

D 38 Years

Answer: C

Question 94

What is the probability of getting exactly one head when a coin is tossed twice?

A $\frac{3}{4}$

B $\frac{1}{2}$

C $\frac{1}{4}$

D 1

Answer: B

Explanation:

Total number of sample points $2^2 = 4$.

Sample spaces= $\{TT\},\{HH\},\{HT\},\{TH\}$.

So, required probability is= $(2/4)=1/2$.

B is correct choice.

Question 95

Major Aerosol pollutant in jet plane emission is-

A Sulphur dioxide

B Carbon monoxide

C Methane

D Fluoro carbon

Answer: D

Question 96

Non-metals are bad conductors of electricity EXCEPT-

A Sulphur

B Graphite

C Hydrogen

D Nitrogen

Answer: B

Question 97

The nucleus of an atom contains-

A Protons and neutrons

B Protons

C Neutrons

D Electrons

Answer: A

Question 98

How much negative charge does an electron possess?

A $1.8 \times 10^{-19}\text{C}$

B $1.6 \times 10^{-19}\text{C}$

C $1.4 \times 10^{-21}\text{C}$

D $1.6 \times 10^{-23}\text{C}$

Answer: B

Question 99

In human body, cells contain -

A 21 pairs of chromosomes

B 22 pairs of chromosomes

C 20 pairs of chromosomes

D 23 pairs of chromosomes

Answer: D

Question 100

Choose from the alternatives the figure that best completes the pattern given below.





Answer: D

Explanation:

Image in diagram D replicates the right option in the given diagram as the two lines are drawn conjugates the incomplete lines and the square in the middle completes it properly.

So, D is correct choice.

RRB JE
29th May 2019
Shift-3

Instructions

For the following questions answer them individually

Question 1

Simplify: $\sqrt{6 + \sqrt{6 + \sqrt{6 + \sqrt{6 + \dots}}}}$

- A 3
- B $\frac{1}{6}$
- C 6
- D 2

Answer: A

Explanation:

Let say, $x = \sqrt{6 + \sqrt{6 + \sqrt{6 + \dots}}}$.

So, $x^2 = 6 + \sqrt{6 + \sqrt{6 + \dots}} = 6 + x$.

or, $x^2 - x - 6 = 0$.

or, $x^2 - 3x + 2x - 6 = 0$.

or, $x(x - 3) + 2(x - 3) = 0$.

or, $(x + 2)(x - 3) = 0$.

So, either $x=3$ or $x=-2$.

But negative value is possible.

A is correct choice.

Question 2

If $x = a \sec \theta + b \tan \theta$ and $y = a \tan \theta + b \sec \theta$, then find $x^2 - y^2$.

- A $a^2 - b^2$
- B $a + b$
- C $a^2 + b^2$
- D $\sqrt{a^2 + b^2}$

Answer: A

Explanation:

$x = a \sec \theta + b \tan \theta$.

or, $x^2 = (a \sec \theta + b \tan \theta)^2 = a^2 \sec^2 \theta + b^2 \tan^2 \theta + 2ab \sec \theta \tan \theta$.

$y^2 = (a \tan \theta + b \sec \theta)^2 = a^2 \tan^2 \theta + b^2 \sec^2 \theta + 2ab \sec \theta \tan \theta$.

So, $x^2 - y^2 = a^2 \sec^2 \theta + b^2 \tan^2 \theta + 2ab \sec \theta \tan \theta - a^2 \tan^2 \theta - b^2 \sec^2 \theta - 2ab \sec \theta \tan \theta$.

or, $x^2 - y^2 = a^2 (\sec^2 \theta - \tan^2 \theta) - b^2 (\sec^2 \theta - \tan^2 \theta) = a^2 - b^2$. ($a^2, \sec^2 \theta - \tan^2 \theta = 1$).

A is correct choice.

Question 3

'Hammer', 'anvil' and 'stirrup' are bones found in which part of the body?

- A The elbow
- B The ear
- C Ribcage
- D The vertebral column

Answer: B

Question 4

Which of the following will best complete the relationship given below?

ZYX: TSR :: MLK : ?

- A HGF
- B EFG
- C GFE
- D EDC

Answer: C

Explanation:

ZYX: TSR

both the words are in sequence of consecutive letters.

So, only EFG follows the sequence MLK.

C is correct choice.

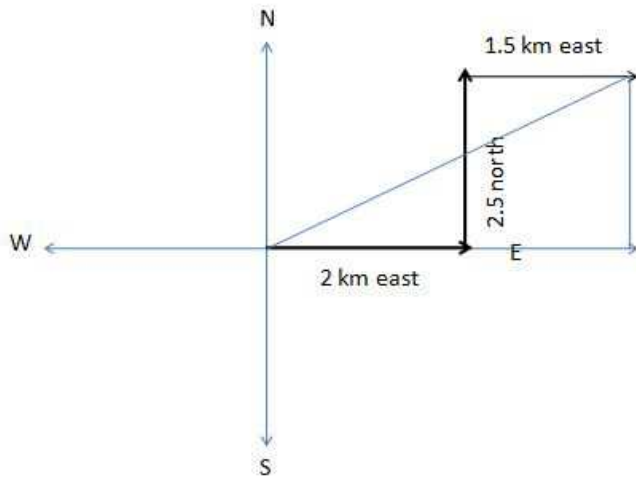
Question 5

A boy walks 2 km to the east and walks 2.5 km to the north. Again he turns to the east and walks 1.5 km. How far is he from the starting point ?

- A 1.5 km
- B 4.3 km
- C 2.5 km
- D 5.5 km

Answer: B

Explanation:



Distance between Starting point and Final point is $= \sqrt{3.5^2 + 2.5^2} = \sqrt{18.5} = 4.30 \text{ km}$.

B is correct choice.

Question 6

In this question, a statement is given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statement:

Company ABC has marketed the product. Go ahead, purchase it if price and quality are your considerations.

Conclusions:

I. The product must be good in quality.

II. The price of the product must be reasonable.

- A Both conclusions I and II follow
- B Either conclusion I or II follows
- C Only conclusion I follows
- D Only conclusion II follows

Answer: A

Explanation:

Statement:

Company ABC has marketed the product. Go ahead, purchase it if price and quality are your considerations.

It means that Company ABC has the authority to certify the associated product that is being discussed .

And they review a product ,only if ,the product price is reasonable and good in quality.

So, both the options are correct.

A is correct choice.

Question 7

With which of the following sports is Parupalli Kashyap associated?

- A Cricket
- B Badminton
- C Football
- D Tennis

Answer: B

Question 8

Find the ODD one out from the given options.

- A 147
- B 151
- C 123
- D 131

Answer: A

Explanation:

147 has two prime factors of 7^2 and 3.

But numbers in other options have only two prime factors .

So, A is correct choice.

Question 9

The Simple Interest and Compound Interest on a certain sum of money for two years are Rs.8400 and Rs.8652 respectively. Find the rate of interest.

- A 4.5%
- B 5%
- C 6%
- D 5.5%

Answer: C

Explanation:

Let say, Sum is P and rate of interest is r %.

So, $2Pr/100=8400$

or, $Pr/100=4200$.

and, $P(1 + r/100)^2 - P = 8652$.

By solving it we get $r=6\%$.

C is correct choice.

Question 10

Which of the following statements is/are CORRECT for carbon compounds?

- A Both poor conductors of electricity and do not have strong forces of attraction between their molecules
- B Do not have strong forces of attraction between their molecules
- C Poor conductors of electricity
- D Good conductors of electricity

Answer: A

Question 11

If $5 @ 29 = 32$, $41 @ 78 = 117$ and $16 @ 32 = 46$, then what will be $22 @ 46$?

- A 48
- B 31
- C 52
- D 66

Answer: D

Explanation:

$$5@29 = 5 + 29 - 2 = 32.$$

$$41@78 = 41 + 78 - 2 = 117.$$

$$16@32 = 16 + 32 - 2 = 46.$$

$$22@46 = 22 + 46 - 2 = 66.$$

D is correct choice.

Question 12

If $\sin A = \cos B$, where A and B are acute, then find $(A + B)$.

- A 60°
- B 50°
- C 90°
- D 45°

Answer: C

Explanation:

Given, $\sin A = \cos B$, it can be written as

$$\sin A = \sin(90 - B)$$

$$A = 90 - B$$

$$A + B = 90.$$

C is correct choice.

Question 13

P invests half as much as Q and Q puts in half as much as R in a business. If the monthly profit of Rs.7000 is shared between them, then what is the share of R ?

- A Rs.4000
- B Rs.2000
- C Rs.3000
- D Rs.1000

Answer: A

Explanation:

Let say, R invested x Rs.

So, Q invests $(x/2)$ Rs.

and P invests $(x/4)$ Rs.

So, P,Q,R will share the profit in

$(x/4:x/2:x)$ or 1:2:4 ratio.

So, R will receive= $(7000 \times (4/7))=4000$ Rs.

A is correct choice.

Question 14

Two men walk along the same direction at 4.5 km/hr and 5.75 km/hr respectively. If they start walking together at their respective speeds, how many kilometres apart are they at the end of 3.5 hours?

A 30.725 km

B 4.375 km

C 5.75 km

D 4.5 km

Answer: B

Explanation:

The man with the 4.5 km/h speed will reach after 3.5 hour= $3.5 \times 4.5 = 15.75$ km.

The man with the 5.75 km/h speed will reach after 3.5 hour= $5.75 \times 3.5 = 20.125$ km.

So they will be apart by $(20.125 - 15.75)$ km or 4.375 km.

B is correct choice.

Question 15

Complete the series.

8, 30, 74, 162, (...)

A 349

B 338

C 316

D 301

Answer: B

Explanation:

$$8 \times 2 + 14 = 30$$

$$30 \times 2 + 14 = 74$$

$$74 \times 2 + 14 = 162$$

$$162 \times 2 + 14 = 338$$

B is correct choice.

Question 16

LCM and HCF of two numbers are 2400 and 16 respectively. If one number is 480, find the other number.

- A 60
- B 40
- C 80
- D 90

Answer: C

Explanation:

Multiplication of two number = LCM×HCF

So, $480 \times x = 2400 \times 16$.

or, $x = (2400 \times 16) / 480 = 80$.

C is correct choice.

Question 17

Ranjith got two times as many sums wrong as he got right. If he attempted 48 sums in all, how many did he solve correctly?

- A 16
- B 19
- C 25
- D 11

Answer: A

Explanation:

Let say, he got right x numbers of sums.

So, he got wrong $= 2x$.

So, $(2x+x)=48$

or, $3x=48$

or, $x=16$.

So, A is correct choice.

Question 18

In this question, statements are given followed by three conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

$$O \geq T > W = G; D \leq T$$

Conclusions:

- I. $W > D$
- II. $W < O$
- III. $O \geq D$

- A Only conclusions II and III are true
- B Only conclusions I and II are true
- C Only conclusions I and III are true

D Only conclusion I is true

Answer: A

Explanation:

There is no relation between W and D .

So, Conclusion I is not valid.

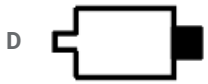
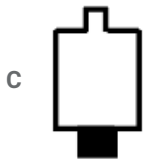
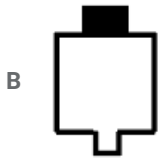
But, $O \geq T > W$ implies that $O > T$.

And, $O \geq W$ and $W \geq D$ implies that $O \geq D$.

So, A is correct choice.

Question 19

Find the ODD one out from the given options.



Answer: D

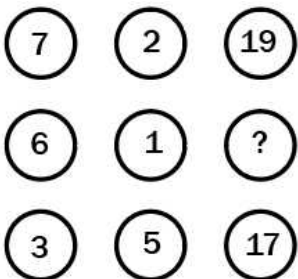
Explanation:

Image in Option D is rotated in anti-clockwise direction.

So, D is correct choice.

Question 20

Choose the alternative that best replaces the question mark(?) in the given figure.



A 14

B 18

C 12

D 15

Answer: D

Explanation:

From first row = $19 - 7 - 2 = 10$.

Third row = $17 - 5 - 3 = 9$.

and second row = $15 - 6 - 1 = 8$.

D is correct choice.

Question 21

Which of the following games is played on a board divided into 64 black-and-white squares ?

A Chess

B Scrabble

C Chinese Checkers

D Ludo

Answer: A

Question 22

The population of a village increased from 18000 to 22500. What is the increase percentage?

A 15%

B 25%

C 30%

D 20%

Answer: B

Explanation:

Percentage increase = $(22500 - 18000) / 18000$

= $4500 / 18000 = 25\%$.

B is correct choice.

Question 23

What is the SI unit of relative density of a substance ?

A $kg\ m^{-3}$

B m^3

C $kg\ m^3$

D No unit

Answer: D

Question 24

Arjun, Bharath and Chandru played a cricket match. The ratio of runs scored by Arjun and Bharath is 1 : 2 and the ratio of runs scored by Bharath and Chandru is 3 : 4. If together they score 204 runs, how many runs has Chandru made more than Arjun?

- A 62 runs
- B 60 runs
- C 70 runs
- D 66 runs

Answer: B

Explanation:

Arjun:Bharath= 1:2=3:6.

Bharath:Chandru= 3:4=6:8.

So, Arjun:Bharath:Chandru=3:6:8.

Let, say they made $3x$, $6x$ and $8x$ runs.

So,

$$(3x + 6x + 8x) = 204.$$

or, $17x=204$.

or, $x=12$.

So, Arjun made= 36 runs and Chandru made =96 runs.

Difference of their runs= $96-36=60$ runs.

B is correct choice.

Question 25

Find the missing group of alphabets in the following series.

YP, TK, (...), MD, KB

- A PG
- B UV
- C RI
- D NF

Answer: A

Explanation:

YP=25-16=9.

TK=20-11=9.

PG=16-7=9.

MD=13-4=9.

KB=11-2=9.

So, A is correct choice.

Question 26

A rectangular carpet has an area of 120 m^2 and a perimeter of 46 m. Find the length of its diagonal.

- A 15 m
- B 16 m
- C 20 m
- D 17 m

Answer: D

Explanation:

Let say, length and breadth of rectangular carpet are l and b .

$$\text{So, } lb = 120$$

$$\text{and, } 2(l + b) = 46$$

$$\text{or, } (l+b)=23.$$

So, $l = 15$ and $b = 8$ is only combination possible.

So, length of it's diagonal=

$$\sqrt{(15^2 + 8^2)}=17 \text{ m.}$$

D is correct choice.

Question 27

Which of the following is an example of sound-absorbent material used to reduce reverberation?

- A Compressed fibre board
- B Ceramic
- C Iron
- D Glass

Answer: A

Question 28

In a certain code, 'ABCDEF' is written as 'ZYXWVU'. How would 'MEAT' be written in that code ?

- A NVZU
- B NVZG
- C NWZG
- D NVGZ

Answer: B

Explanation:

ABCDEF : ZYXWVU

$$A+Z=1+26=27.$$

$$B+Y=2+25=27.$$

$$C+X=3+24=27.$$

$$D+W=4+23=27.$$

$$E+V=5+22=27.$$

$$F+U=6+21=27.$$

Similarly, MEAT = NVZG

B is correct choice.

Question 29

Find the missing number in the following series.

4, 7, 11, 18, 29, 47, (...), 123, 199

A 102

B 84

C 70

D 76

Answer: D

Explanation:

$$4+7=11$$

$$7+11=18$$

$$11+18=29$$

$$18+29=47$$

$$29+47=76$$

$$47+76=123$$

$$76+123=199.$$

D is correct choice.

Question 30

Read the following information carefully and answer the question given below.

Twelve people are sitting in two parallel rows containing six people each, in such a way that there is an equal distance between adjacent persons. In row-1, P, Q, R, S, T and V are seated, and all of them are facing south. In row-2, A, B, C, D, E and F are seated, and all of them are facing north. Therefore, in the given seating arrangement each member seated in a row faces another member of the other row. A sits third to the right of D. Neither A nor D sits at the extreme ends. T faces D. V does not face A, and V does not sit at any of the extreme ends. V is not an immediate neighbour of T. B sits at one of the extreme ends. Only two people sit between B and E. E does not face V. Two persons sit between R and Q. R is not an immediate neighbour of T. C does not face V. P is not an immediate neighbour of R.

How many members sit between T and S?

A One

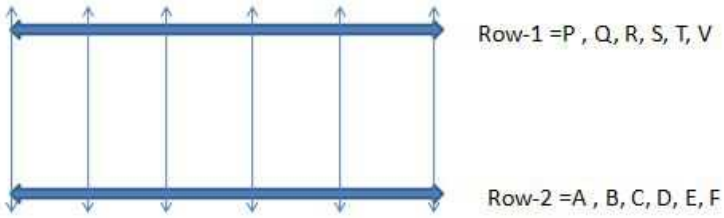
B Four

C Three

D Two

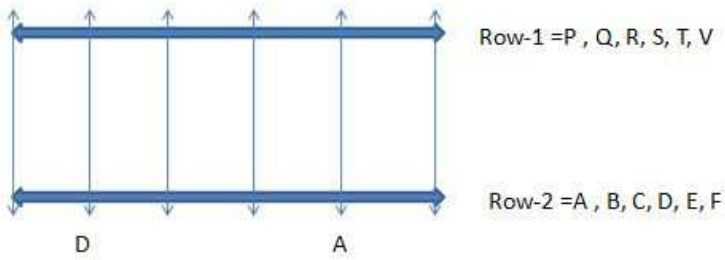
Answer: D

Explanation:

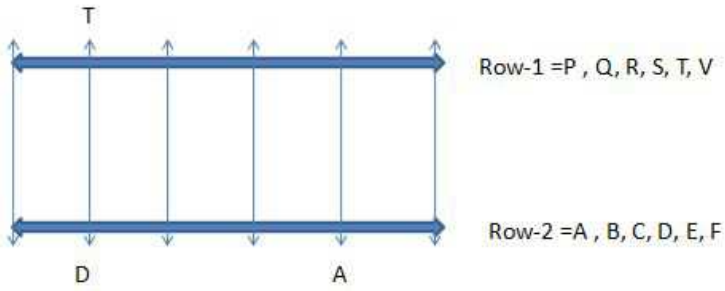


In row-1, P, Q, R, S, T and V are seated, and all of them are facing south.

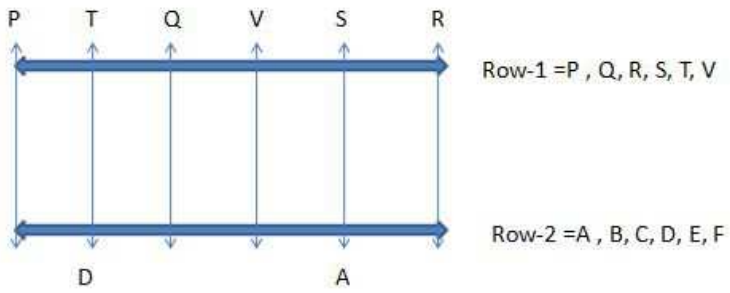
In row-2, A, B, C, D, E and F are seated, and all of them are facing north.



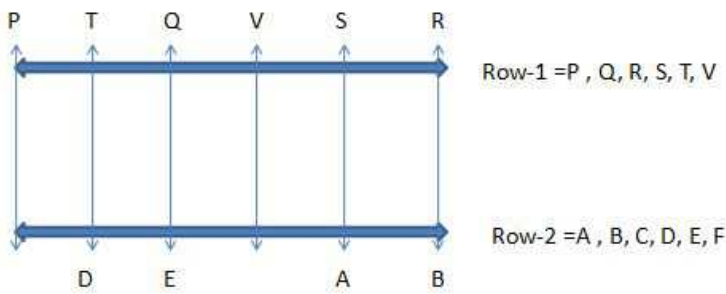
A sits third to the right of D.
Neither A nor D sits at the extreme ends.



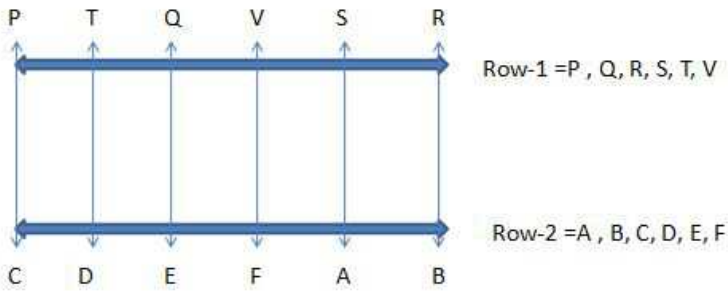
T faces D.



V does not face A, and V does not sit at any of the extreme ends. V is not an immediate neighbour of T.
 P is not an immediate neighbour of R.
 Means that V sits beside Q and P sits beside T and S sits beside R.



B sits at one of the extreme ends.
 Only two people sit between B and E. E does not face V.
 Means that B sits on right side of A.



C does not face V.

So, there are 2 people sit between T and S.
 D is correct choice.

Question 31

Find the value of 0.18

- A $\frac{17}{90}$
- B $\frac{27}{90}$
- C $\frac{18}{100}$
-

D $\frac{17}{100}$

Answer: A

Explanation:

Let say, $x = 0.8$.

So, $10x = 8 + 0.8 = 8 + x$.

or, $9x = 8$.

or, $x = \frac{8}{9}$.

So, $0.18 = 0.10 + \frac{8}{90} = \frac{1}{10} + \frac{8}{90} = \frac{9+8}{90} = \frac{17}{90}$.

A is correct choice.

Question 32

Which of the following glands prepares an animal for flight ?

- A Thyroid
- B Pancreas
- C Adrenal
- D Pineal

Answer: C

Question 33

Which of the following trophies is NOT associated with cricket?

- A Ranji Trophy
- B Ryder Cup
- C Deodhar Trophy
- D The Ashes

Answer: B

Question 34

One should NOT sleep under a tree at night, because-

- A Nitrogen is released
- B Carbon monoxide is released
- C Oxygen is released
- D Carbon dioxide is released

Answer: D

Question 35

Virupaksha Temple, which is a UNESCO World Heritage Site, is dedicated to the deity-

- A Shiva
- B Ganesh
- C Krishna
- D Vishnu

Answer: A

Question 36

Who is considered as the father of Indian surgery ?

- A Sushruta
- B Charaka
- C Atreya
- D Vagbhata

Answer: A

Question 37

What was the theme of 'International Women's Day', 2019?

- A Dialogue, tolerance and peace
- B Let's bring change to the world
- C Bridging health and social care
- D Think equal, build smart, innovate for change

Answer: D

Question 38

The resistance of a conductor directly proportional to its-

- A All the options
- B Length
- C Area of cross section
- D Thickness

Answer: B

Question 39

An Object is sold at a profit of 50% and tax levied is 4%. What is the net profit ?

- A 44%
- B 40%
- C 36%
- D 56%

Answer: A

Explanation:

Let say , cost price= x.

So, Selling price= 1.5x.

So, after tax selling price=(0.96×1.5x)=1.44x.

So, net profit= (1.44x-x)/x=44 %.

A is correct choice.

Question 40

Which lens is used for correcting 'Hypermetropia' in humans?

- A Concave
- B Progressive
- C Convex
- D Bifocal

Answer: C

Question 41

If $x + \frac{1}{x} = 1$, then find the value of $x^3 + \frac{1}{x^3}$.

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

Answer: D

Explanation:

$$x + \frac{1}{x} = 1.$$

$$\text{So, } x^3 + \frac{1}{x^3} = \left(x + \frac{1}{x}\right) \left(x^2 - x \cdot \frac{1}{x} + \frac{1}{x^2}\right) = 1 \cdot \left(\left(x + \frac{1}{x}\right)^2 - 1 - 2 \cdot x \cdot \frac{1}{x}\right) = 1^2 - 1 - 2 = -2.$$

D is correct choice.

Question 42

What are homologous chromosomes ?

- A X-chromosomes

- B Autosomes
- C Heterozygous chromosomes
- D Y-chromosomes

Answer: B

Question 43

The ages of A, B and C are in the ratio 2 : 3 : 4. The sum of their ages is 108. What will be the ratio of their ages twelve years hence ?

- A 2 : 5 : 6
- B 1 : 2 : 3
- C 1 : 3 : 5
- D 3 : 4 : 5

Answer: D

Explanation:

Let say, ages of A,B and C are $2x$, $3x$ and $4x$.

So, $(2x+3x+4x)=108$.

or, $x=108/9=12$.

So, their ages are 24,36 and 48.

So, ages of their ratio after 12 years

= $36:48:60=3:4:5$.

D is correct choice.

Question 44

Which of the following salts is used in the preparation of sodium hydroxide, baking soda, washing soda?

- A Sodium carbonate
- B Potassium chloride
- C Magnesium chloride
- D Sodium chloride

Answer: D

Question 45

Across which of the following rivers is Mettur Dam built ?

- A Mahanadi
- B Cauvery
- C Sindhu
- D Bhavani

Answer: B

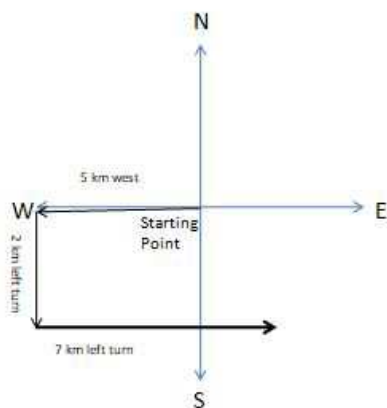
Question 46

Rahim started from point X and walked straight 5 km west, then turned left and walked straight 2 km and again turned left and walked straight 7 km. In which direction is he from the point X?

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

Answer: C

Explanation:



So, Final direction is South-East.

C is correct choice.

Question 47

Find the missing number in the following series.
7776, (...), 216, 36, 6

- A 1263
- B 1275
- C 1296
- D 1287

Answer: C

Explanation:

$6 \times 6 = 36$, $36 \times 6 = 216$, $216 \times 6 = 1296$, $1296 \times 6 = 7776$.

C is correct choice.

Question 48

A dilute ferrous sulphate solution was gradually added to the beaker containing acidified potassium permanganate solution. The light purple colour of the solution fades and finally disappears. Which of the following is the CORRECT explanation for the observation?

- A Potassium permanganate is an unstable compound
- B Ferrous sulphate acts as an oxidising agent and oxidises potassium permanganate
- C Potassium permanganate is an oxidising agent, it oxidises ferrous sulphate
- D The colour disappears due to dilution

Answer: C

Question 49

The headquarter of Wildlife Institute of India is located at-

- A Bhopal
- B New Delhi
- C Mysuru
- D Dehradun

Answer: D

Question 50

Which is the main fuel used in a nuclear powerplant ?

- A Caesium-137
- B Uranium-235
- C Polonium-210
- D Strontium-90

Answer: B

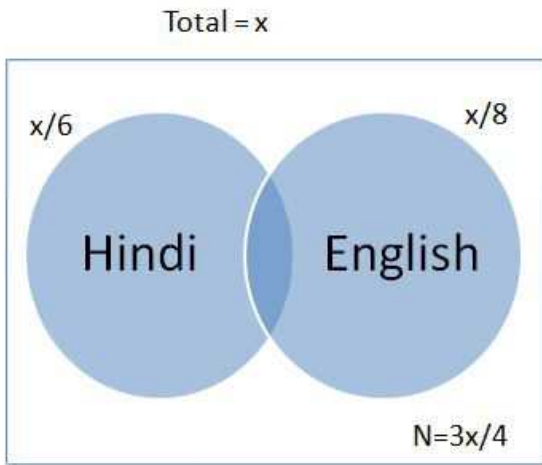
Question 51

In a class $\frac{3}{4}$ of the students do not know either Hindi or English. $\frac{1}{6}$ of the students know English and $\frac{1}{8}$ of the students know Hindi. What part of the students know both English and Hindi?

- A $\frac{1}{12}$
- B $\frac{1}{4}$
- C $\frac{5}{6}$
- D $\frac{1}{24}$

Answer: D

Explanation:



Let say, total number of students = x.

So, number of students who knows both Hindi and English is = $\left(\frac{3x}{4} + \frac{x}{6} + \frac{x}{8} - x\right) = \frac{18x+4x+3x-24x}{24} = \frac{x}{24}$.

So, $\frac{1}{24}$ of students knows Hindi and English.

D is correct choice.

Question 52

If $x = 100, y = 99$ then find the value of $\frac{x^2 + y^2 + xy}{x^3 - y^3}$

- A 0
- B 2
- C 199
- D 1

Answer: D

Explanation:

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

So, required ratio = $1/(x-y) = 1/(100-99) = 1$.

D is correct choice.

Question 53

Acids are in taste.

- A Bitter
- B Sour
- C Salty
- D Sweet

Answer: B

Question 54

A sum increases by 100% in 8 years at a certain rate of Simple Interest. What will be the Compound Interest on Rs.8000 after 2 years at the same rate of interest?

- A Rs.2125
- B Rs.2050
- C Rs.2075
- D Rs.2025

Answer: A

Explanation:

Let say, rate of interest= r%.

So, $P(1+8r/100)=2P$

or, $8r/100=1$

or, $r = 12.5\%$.

So, compounded amount=

$$8000(1 + 0.125)^2$$

$$=10125.$$

Compound interest= $10125-8000=2125$ Rs.

A is correct choice.

Question 55

Which isotope was chosen as the standard reference for measuring atomic masses?

- A Carbon-12
- B Carbon-13
- C Carbon-11
- D Carbon-14

Answer: A

Question 56

An incident ray makes an angle of 30° with the surface of a plane mirror. What is the angle of reflection?

- A 45°
- B 30°
- C 15°
- D 60°

Answer: B

Explanation:

If angle of incidence is 30° , then angle of reflection shall be equal to it.

B is correct choice.

Question 57

If $687 + 509 = 560897$, then $619 + 703 = ?$

- A 760139
- B 760931
- C 193670
- D 760391

Answer: A

Explanation:

$$687 + 509 = 560897$$

By assemble 687 and 509 we get 56 , 08, 97.

$$619 + 703$$

By assemble 619 and 703 we get 76, 01, 39.

So, it will be = 760139.

A is correct choice.

Question 58

P can do some work in 9 days. If Q is 50% more efficient than P, then how long will Q take to do the work ?

- A 13.5 days
- B 4.5 days
- C 6 days
- D 3 days

Answer: C

Explanation:

Time taken by P:Q=150:100.

$$\text{So, } 9:x = 150:100.$$

$$\text{or, } x = 900/150 = 6.$$

So, Q will take 6 days.

C is correct choice.

Question 59

A square sheet of paper is folded into a cylinder by rolling along its side. What is the ratio of side of the square to the base radius of the cylinder ?

- A $1 : \pi$
- B $1 : 2\pi$
- C $1 : 4\pi$
- D $2\pi : 1$

Answer: D

Explanation:

If the square sheet is folded to cylindrical shape then length of the side of the square is the circumference of base of cylinder.

So, side of square = $2\pi r$.

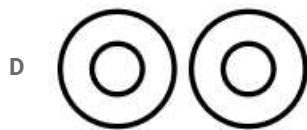
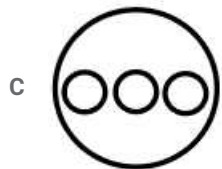
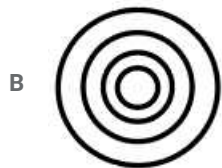
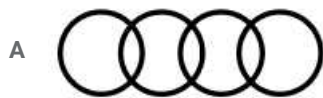
So, required ratio = $2\pi r : r = 2\pi : 1$.

D is correct choice.

Question 60

Choose the figure that best represents the relationship among the classes given below.

Batsman, Ball, Cricket, Stump



Answer: C

Explanation:

Batsman, Ball and Stump all are part of cricket.

So, C is correct choice.

Question 61

A, B and C can run around a circular path once in 252 seconds, 308 seconds and 198 seconds respectively. If they start running from a point simultaneously, after what time will they meet again at the starting point?

A 46 minutes 12 seconds

B 45 minutes

C 42 minutes 50 seconds

D 26 minutes 30 seconds

Answer: A

Explanation:

They will meet after time taken by them which is most common to their individual time taken by them.

So, required time = LCM(252, 308, 198).

$252 = 2 \times 2 \times 7 \times 9$.

$308 = 2 \times 2 \times 7 \times 11$.

$$198=2\times 9\times 11.$$

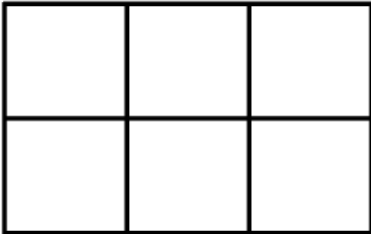
$$\text{So, LCM}(252,308,198)=2\times 2\times 11\times 7\times 9=2772 \text{ sec.}$$

So, required time is 46 min 12 sec.

A is correct choice.

Question 62

How many squares are therein the given figure ?



A 10

B 8

C 4

D 6

Answer: B

Explanation:

In middle two medium size square and 6 total squares are there in the picture.

So, total $2+6=8$ squares are there in the image.

B is correct choice.

Question 63

Find the number of factors of 12 excluding 1 and 12.

A 4

B 3

C 2

D 1

Answer: A

Explanation:

Factors of 12 are : 1,2,3,4,6,12.

So, A is correct choice.

Question 64

Which Mughal emperor was also known as Salim ?

A Jahangir

B Shah Jahan

- C Akbar
- D Aurangzeb

Answer: A

Question 65

Dhanush missile is a naval version of _____ missile.

- A Akash
- B Agni
- C Prithvi
- D Nag

Answer: C

Question 66

Choose the alternative that best replaces the question mark(?) in the given figure.

8	9	10
6	5	4
25	?	19
23	27	21

- A 12
- B 21
- C 18
- D 24

Answer: C

Explanation:

From first column:

$$8 \times 6 = 23 + 25 = 48.$$

$$10 \times 4 = 19 + 21 = 40.$$

$$\text{Similarly, } 5 \times 9 = 18 + 27 = 45.$$

C is correct choice.

Question 67

Which ingredient makes bread fluffy ?

- A Yeast
- B Vanilla

C Flour

D Egg

Answer: A

Question 68

Find the ODD one out from the given options.

A 11

B 9

C 18

D 6

Answer: A

Explanation:

9,18 and 6 are composite numbers.

But 11 is a prime number.

A is correct choice.

Question 69

Which of the following decreases in moving from left to right along a period ?

A Electron affinity

B Atomic radius

C Ionisation energy

D Electro negativity

Answer: B

Question 70

Read the following information carefully and answer the question given below.

During a vacation, a game is being played. For the game, 9 people from J to R (mix of boys and girls) have to stand in a vertical row. Boys are wearing black shoes and girls are wearing pink shoes. The row starts at top and with a pink shoe. Boys and girls stand alternately in the row. Each position in the row can be occupied by one person only.

i) J stands seven places before K.

ii) Third pink shoes is L.

iii) Second boy after L is M.

iv) Fourth place in the row is occupied by N.

v) O stands ahead of J.

vi) P stands between L and J.

vii) R is a girl.

Which of the following is a pair of girls ?

A P and L

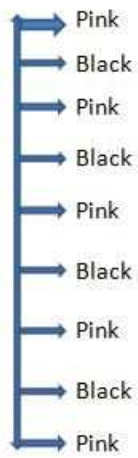
B R and M

C N and Q

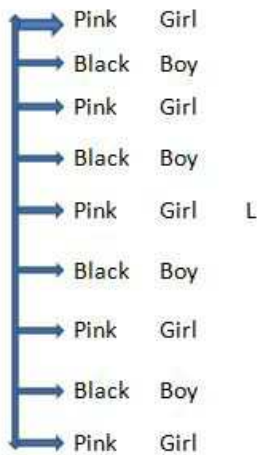
D O and N

Answer: A

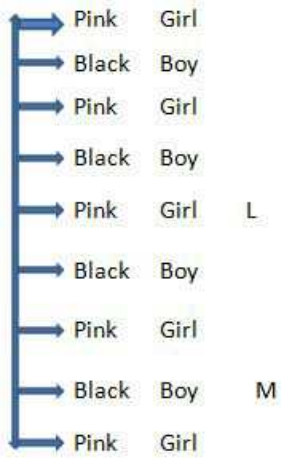
Explanation:



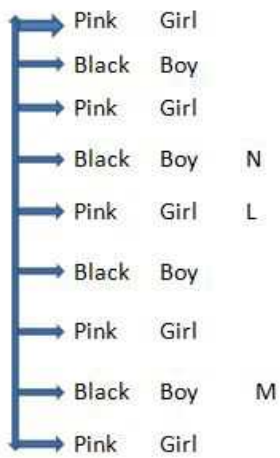
The row starts at top and with a pink shoe.
Boys and girls stand alternately in the row.
And, ii) Third pink shoes is L.
Means that top in the line is wearing Pink shoes.



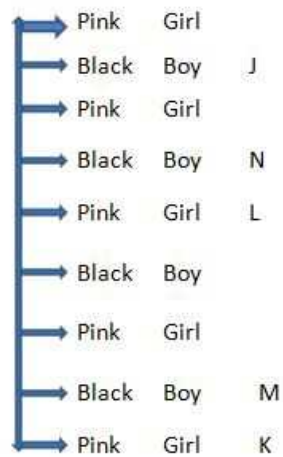
Boys are wearing black shoes and girls are wearing pink shoes.



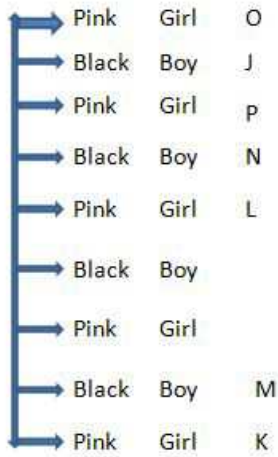
iii) Second boy after L is M.



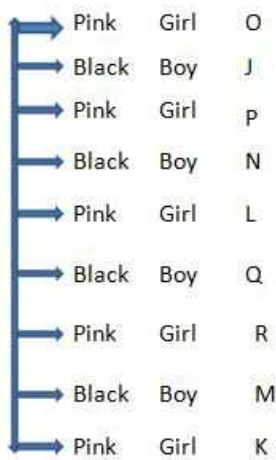
iv) Fourth place in the row is occupied by N.



i) J stands seven places before K.



- v) O stands ahead of J.
- vi) P stands between L and J.



vii) R is a girl.

So, P and L are girls.

A is correct choice.

Question 71

In a code language, 'KUMAR' is coded as 'LVNBS'. How is 'EMOTIONAL' coded in that language ?

- A FNPUJPOBM
- B FNQUJQMBM
- C FNQUJPOBM
- D FNQUJQOBM

Answer: A

Explanation:

KUMAR : LVNBS

$K+1=L, U+1=V, M+1=N, A+1=B, R+1=S.$

So, EMOTIONAL= FNPUJPOBM.

A is correct choice.

Question 72

Which part of our body does rheumatism affect ?

- A Neck
- B Heart
- C Head
- D Joint

Answer: D

Question 73

Find the decimal equivalent of $\frac{1}{25}$.

- A 0.4
- B 0.2
- C 0.004
- D 0.04

Answer: D

Explanation:

$$\frac{1}{25} = \frac{100}{100 \times 25} = \frac{4}{100} = 0.04.$$

D is correct choice.

Question 74

Simplify: $23 \times 2(45 - 15) + 168 \div 4 \div 2 - (11)^2$

- A 1280
- B 1080
- C 1410
- D 685

Answer: A

Explanation:

$$23 \times 2(45 - 15) + 168 \div 4 \div 2 - (11)^2.$$

$$= 23 \times 2 \times 30 + 168 \div 4 \div 2 - 121.$$

$$= 23 \times 2 \times 30 + 168 \div 8 - 121.$$

$$= 23 \times 2 \times 30 + 21 - 121.$$

$$= 1401 - 121.$$

$$= 1280.$$

A is correct choice.

Question 75

Find the missing group of alphabets in the following series.

ZA, WB, (...), KG, BK

A PG

B IR

C RP

D RD

Answer: D

Explanation:

Conversion Table

A = 1	K = 11	U = 21
B = 2	L = 12	V = 22
C = 3	M = 13	W = 23
D = 4	N = 14	X = 24
E = 5	O = 15	Y = 25
F = 6	P = 16	Z = 26
G = 7	Q = 17	
H = 8	R = 18	
I = 9	S = 19	
J = 10	T = 20	

$$ZA = 26 + 1 = 27.$$

$$WB = 23 + 2 = 25.$$

$$RD = 18 + 4 = 22.$$

$$KG = 11 + 7 = 18.$$

$$BK = 2 + 11 = 13.$$

So, it's a sequence of difference of 2,3,4 and 5.

D is correct choice.

Question 76

If $\sin A = \frac{1}{2}$ and A and B are complementary angles, then find the value of $\sin(A - B)$.

A -1

B 0

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

D $\frac{1}{2}$

Answer: C

Explanation:

According to question, $A + B = 90^\circ$.

$$\sin(A - B) = \sin A \cos B - \sin B \cos A$$

$$= \sin A \sin A - (\cos A) \cos A. \quad (\text{As } \cos(90 - A) = \sin A).$$

$$= \sin^2 A - \cos^2 A.$$

$$= \sin^2 A - (1 - \sin^2 A).$$

$$= 2\sin^2 A - 1.$$

$$=2\left(\frac{1}{2}\right)^2 - 1.$$

$$=2 - 1.$$

$$=1.$$

C is correct choice.

Question 77

Father is aged 3 times more than his son. After 8 years, he would be 2.5 times his son's age. Further after 8 years, what would be the ratio of his age to that of his son?

A 3:1

B 5:2

C 2:1

D 11:4

Answer: C

Explanation:

Let say, son's age = a.

So, Father's age = 4a.

After 8 years,

$$4a + 8 = 2.5(a + 8).$$

$$\text{or, } 1.5a = 20 - 8 = 12.$$

$$\text{or, } a = 8.$$

$$\text{So, required ratio} = (32 + 8 + 8) : (8 + 8 + 8) = 48 : 24 = 2 : 1.$$

C is correct choice.

Question 78

Why are luggages fitted with rollers?

A Wheels reduce friction and rolling makes the movement smooth and easy

B Rolling friction is higher than sliding friction. Hence, luggages are fitted with rollers

C Rollers give grip to luggage so that movement is tough

D Rollers obstruct easy and smooth movement

Answer: A

Question 79

Ram cycles from a place A to B and again back to A at a uniform speed of 12 km/h. His friend Gopi sails on a boat from A to B and back to A where his still water speed is 10 km/h and flow of river is 4 km/h. Who will return to A first?

A Both reach at same time

B Gopi

C Cannot be determined

D Ram

Answer: D

Explanation:

Let say, distance between A and B is d km.

RAM's Time :

$$\text{Time taken} = \frac{d}{12} + \frac{d}{12} = \frac{d}{6} \text{ hr.} = \frac{7d}{42} \text{ hr.}$$

GOPI's Time :

$$\text{Time taken} = \frac{d}{14} + \frac{d}{6} = \frac{3d+7d}{42} \text{ hr} = \frac{10d}{42} \text{ hr.}$$

So, time taken by Ram will be less than Gopi.

D is correct choice.

Question 80

An isotope of iodine is used in the treatment of-

- A Rickets
- B Nyctalopia
- C Goitre
- D Scurvy

Answer: C

Question 81

Which of the following vitamin deficiencies is fulfilled by golden rice ?

- A Vitamin K
- B Vitamin B
- C Vitamin A
- D Vitamin C

Answer: C

Question 82

The refractive index of second medium with respect to the first medium n_{21} is given by which formula?

- A The sum of the speed of light in the first medium and the speed of light in the second medium $v_1 + v_2$
- B The product of the speed of light in first medium and the speed of light in the second medium. $v_1 \times v_2$
- C Ratio of speed of light in first medium to speed of light in second medium. v_1/v_2
- D Ratio of speed of light in second medium to speed of light in first medium. v_2/v_1

Answer: C

Question 83

Who was the first woman Prime Minister of Great Britain?

- A Cherie Blair
- B Hillary Clinton
- C Margaret Thatcher
- D Imelda Marcos

Answer: C

Question 84

The most reactive among the halogens is-

- A Fluorine
- B Chlorine
- C Bromine
- D Iodine

Answer: A

Question 85

Which of these transports oxygen to every cell of the body?

- A R.B.C and W.B.C.
- B R.B.C. and hormone
- C W.B.C.
- D R.B.C.

Answer: D

Question 86

At which of the following speed do bullets travel?

- A Supersonic
- B Hyposonic
- C Subsonic
- D Infrasonic

Answer: A

Question 87

Onion is a

- A Fruit
- B Root
- C Seed
- D Bulb

Answer: D

Question 88

In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1) All students are girls.
- 2) No girl is beautiful.

Conclusions:

- I. Some students are beautiful.
- II. No student is beautiful.

- A Only conclusion I follows
- B Only conclusion II follows
- C Neither conclusion I nor II follows
- D Both conclusions I and II follow

Answer: B

Explanation:

Statements:

- 1) All students are girls.
- 2) No girl is beautiful.

We can imply that students and girls don't have any relation with beautiful.

So, B is correct choice.

Question 89

Aluminium foil used for wrapping-

- A Food items
- B Wires
- C Plastic
- D Cloth

Answer: A

Question 90

A situation marked by rising prices and stagnation in demand is known as-

- A Stagflation
- B Cost-push inflation
- C Demand-pull inflation
- D Wage-push inflation

Answer: A

Question 91

Hari bought a cardboard for Rs.18000 and spent Rs.5000 on transport and Rs.2000 on labour. He made 500 boxes and sold them at Rs.60 per box. What was his profit percentage?

- A 20%
- B 22%
- C 15%
- D 25%

Answer: A

Explanation:

His total expenditure = $18000 + 5000 + 2000 = 25000$ Rs.

Total Selling price = $500 \times 60 = 30000$ Rs.

Profit percentage = $\frac{30000 - 25000}{25000} \times 100 = 20\%$.

A is correct choice.

Question 92

Which of the following two banks merger with Bank of Baroda was effective from 1 April 2019 ?

- A Axis Bank and Vijaya Bank
- B Dena Bank and Axis Bank
- C Vijaya Bank and Dena Bank
- D Vijaya Bank and SBI Bank

Answer: C

Question 93

Srinivas can do a job in 15 days and Ramesh can do the same job in 9 days. With the help of Ravi, they did the job in 3 days. In how many days can Ravi alone do the same job?

- A $6\frac{2}{5}$ days
- B 10 days
- C $6\frac{1}{5}$ days
- D $6\frac{3}{7}$ days

Answer: D

Explanation:

Let say, Ravi do the job in x days .

$$\text{So, } \frac{1}{x} + \frac{1}{15} + \frac{1}{9} = \frac{1}{3}.$$

$$\text{or, } \frac{1}{x} = \frac{1}{3} - \frac{1}{15} - \frac{1}{9}.$$

$$\text{or, } \frac{1}{x} = \frac{15-3-5}{45}.$$

$$\text{or, } x = \frac{45}{7} = 6\frac{3}{7}.$$

D is correct choice.

Question 94

The outermost fibrous coating of the eye is called-

- A Sclera
- B Ciliary Body
- C Choroid
- D Iris

Answer: A

Question 95

Complete the series.

8, 13, 13, 23, 18, 33, (...)

- A 21
- B 23
- C 35
- D 31

Answer: B

Explanation:

It is an alternate series of :

(8,13,18,23) and (13,23,33,43)

B is correct choice.

Question 96

Who was the first person to land on the moon?

- A Neil Armstrong
- B Edwin Aldrin
- C Alan Bean
- D Rakesh Sharma

Answer: A

Question 97

Which of the following is the highest mountain peak in India ?

- A Nanda Devi
- B Anamudi
- C Kanchenjunga
- D Kamet

Answer: C

Question 98

Which of the following Articles is for "Protection of interests of Minorities"?

- A Article 27
- B Article 29
- C Article 30
- D Article 26

Answer: B

Question 99

Which of the following states consists of super energetic and super excited particles ?

- A Plasma
- B Gas
- C Liquid
- D Solid

Answer: A

Question 100

From a cube of side 6 cm, a hemisphere of maximum volume is scooped out. What is the remaining volume?

- A $216 - 12\pi$
- B $\left[27 - \left(\frac{2\pi}{3}\right) \times 6\right]$
- C $216 - 18\pi$
- D $36 - \left(\frac{3\pi}{3}\right)$

Answer: C

Explanation:

vol of cube = $6 * 6 * 6 = 216cm^3$

radius of max.hemisphere=3cm

vol. of hemisphere= $\frac{2}{3} \pi 3^3 = 18\pi$.

vol. of remaining part= $(216 - 18\pi) \text{ cm}^3$.

C is correct choice.