

RRB JE
1st June 2019
Shift-1

Instructions

For the following questions answer them individually

Question 1

Which of the following will show 'Tyndall effect?'

- A Milk
- B Sugar solution
- C Salt solution
- D Copper sulphate solution

Answer: A

Question 2

Which word will best complete the relationship given below?

Physician : Treatment :: Judge : ?

- A Lawyer
- B Court
- C Judgement
- D Arrest

Answer: C

Question 3

In a certain code, 15789 is written as 'XTZAL' and 2346 is written as 'NPSU'. How is 23549 written in that code?

- A NPZTX
- B NPTSL
- C NPLUS
- D NPSUL

Answer: B

Question 4

Find the volume of a sphere whose surface area is $1386m^2$.

- A $3850 m^3$
- B $4651 m^3$
- C $4851 m^3$
- D $5711 m^3$

Answer: C

Question 5

Find the ODD one out from the given options.

A 144

B 400

C 196

D 225

Answer: D

Question 6

Simplify: 0.05×0.002

A 0.01

B 0.0001

C 0.1

D 0.001

Answer: B

Question 7

Which machine part is used to reduce friction between hubs and axles of ceiling fans and in bicycles ?

A Ball bearings

B Springs

C Nuts

D Bolts

Answer: A

Question 8

Eighteen men can complete a piece of work in 64 days. 9 women can complete it in 108 days, whereas 7 children can finish it in 216 days. How many days will 16 men, 9 women and 21 children together take to complete the same work?

A 42

B 27

C 32

D 45

Answer: B

Question 9

Which of the following is the number of oscillations per unit time of the sound wave?

- A Amplitude
- B Frequency
- C Time period
- D Wavelengt

Answer: B

Question 10

Five years ago, ratio of ages of P and Q was 7 : 9. Ten years hence, this ratio would become 5 : 6. What is the ratio at present?

- A 4 : 5
- B 6 : 7
- C 2 : 1
- D 5 : 4

Answer: A

Question 11

Which of the following material has a shiny appearance?

- A Carbon
- B Sulphur
- C Aluminium
- D Coal

Answer: C

Question 12

Which colour among the seven colours of white light gets least deviated after dispersion of light through a glass prism?

- A Orange
- B Violet
- C Indigo
- D Red

Answer: D

Question 13

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

Statements:

- 1) All trees are flowers.
- 2) All flowers are grasses.

Conclusions:

- I. All trees are grasses.
- II. Some flowers are grasses.

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

Answer: C

Question 14

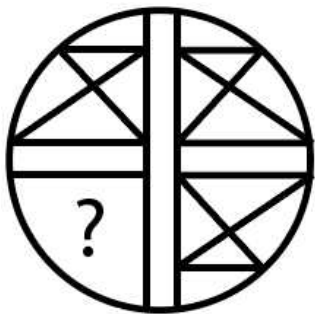
Two numbers are in the ratio 1 : 4 and their LCM and HCF are 84 and 21. Find the smaller number.

- A 108
- B 21
- C 18
- D 84

Answer: B

Question 15

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



A





Answer: B

Question 16

On which of the following river banks is Jammu situated?

- A Tapti
- B Tungabhadra
- C Tawi
- D Mahanadi

Answer: C

Question 17

Which of the following is the world's longest venomous snake?

- A Coral snake
- B Viper
- C King Cobra
- D Mamba

Answer: C

Question 18

Which part of the ear turns the sound vibrations to electrical signals?

- A Auditory canal
- B Pinna
- C Tympanic membrane

D Cochlea

Answer: D

Question 19

The chemical process by which glucose is broken down anaerobically is known as?

A Sublimation

B Sintering

C Fermentation

D Distillation

Answer: C

Question 20

National Bamboo Mission is a sponsored scheme of Ministry of

A Chemicals and fertilizers

B Environment, Forests and Climate Change

C Agriculture and farmers welfare

D Water Resources

Answer: C

Question 21

A man walks 3 km towards west and walks 2 km to south. Again he turns east and walks for 0.5 km. How far is he from the starting point?

A 2.5 km

B 2 km

C 3 km

D 3.2 km

Answer: D

Question 22

On which principle does the human eye work?

A Reflection of light

B Refraction of light

C Scattering of light

D Dispersion of light

Answer: B

Question 23

Simplify: $\sin(30^\circ - A) + \sin(30^\circ + A)$

A $2 \sin A$

B $2 \cos A$

C $\sin A$

D $\cos A$

Answer: D

Question 24

The repayment of a loan after 6 years at rate of 24% Simple Interest is Rs.73200. What is the amount borrowed?

A Rs.42000

B Rs.30000

C Rs.45000

D Rs.30800

Answer: B

Question 25

Ages of two brothers differ by 7 and are in the ratio 3 : 2. What is the sum of their ages?

A 21

B 42

C 35

D 45

Answer: C

Question 26

Atoms of the same element or of different elements can join together to form?

A Elements

B Ions

C Molecules

D Alloys

Answer: C

Question 27

The chemical formula of gypsum is ?

- A $Na_2CO_3 \cdot 8H_2O$
- B $CaSO_4 \cdot 3H_2O$
- C $Na_2CO_3 \cdot 10H_2O$
- D $CaSO_4 \cdot 2H_2O$

Answer: D

Question 28

Vitamin B1 is also called as

- A Niacin
- B Thiamine
- C Biotin
- D Ascorbic acid

Answer: B

Question 29

An inlet pipe will fill a tank in 10 minutes. There are two outlets that can empty the tank separately in 12 and 15 minutes respectively. If all the pipes are opened and water starts filling up the tank, in what time will the tank get filled or emptied ?

- A Emptied in 20 minutes
- B Filled in 36 minutes
- C Emptied in 18 minutes
- D Filled in 75 minutes

Answer: A

Question 30

Who was the first woman ruler of Delhi?

- A Razia Sultana
- B Chand Bibi
- C Manikarnika
- D Rani Roopmati

Answer: A

Question 31

In a certain code language, 'tom na rod' means 'give me sweet', 'jo ta rod' means 'you and me', 'pot ta noc' means 'you are good', and 'jo mit noc' means 'good and bad'. Which of the following represents 'bad' in that language ?

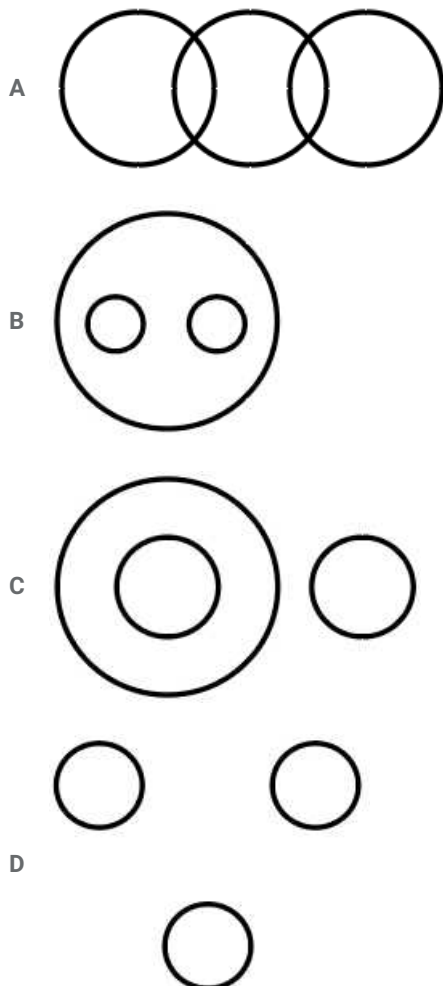
- A jo
- B noc
- C rod
- D mit

Answer: D

Question 32

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

Truck, Ship, Goods



Answer: A

Question 33

If only the measures of the diagonals are given, which of these quadrilateral can be constructed?

1) Square 2) Rectangle 3) Rhombus

- A 1 and 3

B 1 and 2

C 3 only

D 1 only

Answer: A

Question 34

Find the missing number in the series.

(...), 16, 20, 11, 18, 6

A 15

B 14

C 22

D 17

Answer: C

Question 35

The difference between two integers is 5 and their product is 500. Find the numbers.

A 30, 25

B 25, 20

C 15, 20

D 21, 26

Answer: B

Question 36

Fullerene consists of _____ carbon atoms.

A 32

B 48

C 4

D 60

Answer: D

Question 37

_____ has been awarded with the Padma Vibhushan award in 2019.

A Manoj Bajpayee

B Anilkumar Manibhai Naik

C Darshan Lal Jain

D Nanaji Deshmukh

Answer: B

Question 38

The population of a town increased by 10% and 20% in two successive years, but decreased by 25% in the third year. Find the ratio of the population in the third year and the population 3 years back.

A 1 : 1

B 2 : 1

C 99 : 100

D 100 : 99

Answer: C

Question 39

When the number of atoms of each element is the same on both sides of the equation, it is a/an?

A Skeletal equation

B Unbalanced equation

C Balanced equation

D Mixed equation

Answer: C

Question 40

The mean of a distribution is 14 and standard deviation is 5. Find the coefficient of variation.

A 48.3%

B 60.4%

C 27.9%

D 35.7%

Answer: D

Question 41

If $2x + y = 35$ and $3x + 4y = 65$, find the value of x/y .

A 3

B 9

C 5

D 7

Answer: A

Question 42

Find the ODD one out from the given options.

A Baseball

B Football

C Chess

D Volleyball

Answer: C

Question 43

Tank 'A' is two-fifths full. Pipe P can fill it in 10 minutes while pipe Q can empty it in 6 minutes. In what time will the tank get empty, if both P and Q are opened?

A 7 minutes

B 6 minutes

C 6.5 minutes

D 5.5 minutes

Answer: B

Question 44

What is the present position of India on the 2019 World Press Freedom Index (RSF)?

A 136

B 140

C 180

D 120

Answer: B

Question 45

A boat whose speed in still water is 15 km/h goes 30 km downstream and comes back upstream in 4.5 hours. What is the speed of water current?

A 10 km/h

B 4 km/h

C 5 km/h

D 6 km/h

Answer: C

Question 46

The difference between the Simple Interest on some principal at 8% for 8 months and 6% for 14 months is Rs.200. What is the principal?

- A Rs.14400
- B Rs.24000
- C Rs.12000
- D Rs.12800

Answer: C

Question 47

The length of the direct common tangent to two circles of radii r_1 and r_2 and is the distance between their centres is:

- A $\sqrt{d^2(r_1r_2)}$
- B $\sqrt{d^2 - (r_1r_2)^2}$
- C $\sqrt{d^2 - (r_1 + r_2)^2}$
- D $\sqrt{d^2 - (r_1 - r_2)^2}$

Answer: D

Question 48

Ethanoic acid is commonly called?

- A Sulphuric acid
- B Acetic acid
- C Sulphonic acid
- D Hydrochloric acid

Answer: B

Question 49

In a certain code, 26 stands for 'A', 25 stands for 'B'. Which of the following stands for the name of a country?

- A 11-26-16-13
- B 16-26-11-14-26
- C 18-19-22-12-18-26
- D 13-22-11-26-15

Answer: D

Question 50

How many litres of water must be added to 16 litres milk containing 10% water to dilute it with 20% water?

- A 4 litres
- B 1 litre
- C 3 litres
- D 2 litres

Answer: D

Question 51

A cycle bought at Rs.1400 is sold at a loss of 15%. What is the selling price?

- A Rs.1090
- B Rs.1385
- C Rs.1190
- D Rs.1290

Answer: C

Question 52

The number of protons in an atom of an element is equal to its?

- A Equivalent weight
- B Atomic weight
- C Electron affinity
- D Atomic number

Answer: D

Question 53

The longest river of peninsular India is?

- A Tapti
- B Godavari
- C Mahanadi
- D Narmada

Answer: B

Question 54

Starting from a point, Ganesha walked 12 m north. Then, he turned right and walked 10 m, he again turned right and walked 12 m, then he turned left and walked 5 m. How far and in which direction is he now from the starting point?

- A 10 m, west
- B 10 m, east
- C 5 m, west
- D 15 m, east

Answer: D

Question 55

The _____ is the first citizen of India.

- A President
- B Vice-President
- C Member of Legislative Assembly
- D Prime Minister

Answer: A

Question 56

Plants that grow in the absence of sunlight in water are called?

- A All of the options
- B Algae
- C Shrubs
- D Fungi

Answer: D

Question 57

The curved surface areas of two cones are in the ratio 2 : 1; their slant heights are in the ratio 1 : 2. What is the ratio of their radii?

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

Answer: A

Question 58

In the game of chess, which animal does a rook represent?

- A Elephant
- B Goat
- C Horse
- D Camel

Answer: A

Question 59

Find the missing group of alphabets in the following series.

(...), PSV, EHK, TWZ, ILO

- A BEH
- B IMP
- C ADG
- D ZCF

Answer: C

Question 60

Edible part of banana is

- A Epicarp and mesocarp
- B Epicarp
- C Pericarp
- D Endocarp and mesocarp

Answer: D

Question 61

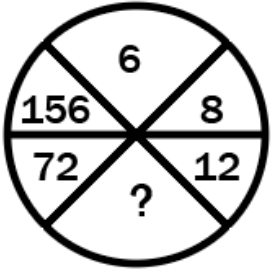
Area of a square field is 24200 m^2 . How long will it take for a person to cross the field diagonally at the rate of 4.4 km/h?

- A 4 minutes
- B 2.5 minutes
- C 2 minutes
- D 3 minutes

Answer: D

Question 62

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



- A 49
- B 54
- C 61
- D 42

Answer: D

Question 63

Why does a nail have a pointed tip ?

- A The force acting on a larger area exerts a zero pressure
- B The force acting on a smaller area exerts a larger pressure
- C The force acting on a smaller area exerts a smaller pressure
- D The force acting on a larger area exerts a larger pressure

Answer: B

Question 64

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

Seven members A, B, C, D, E, F and G represent different countries in Olympics, USA, China, Korea, France, Russia, Australia and Japan; each one competes for a different sport, viz. volleyball, archery, rifle shooting, tennis, boxing, athletics and football. The order of persons, countries and games is not necessarily the same. C represents China for archery. D represents USA but not for volleyball or rifle shooting. One who represents Japan competes for boxing. E competes for volleyball but not Korea. A represents Australia for athletics. The one who represents Russia competes for tennis. F does not represent Korea or Japan. G competes for rifle shooting.

Which of the following countries is represented by E?

- A Japan
- B France
- C Korea
- D Russia

Answer: B

Question 65

What is the work done in moving a unit positive charge from infinity to that point, at that point?

- A Electric potential
- B Resistance
- C Charge
- D Current

Answer: A

Question 66

Who among the following was the youngest batsman to score 10,000 test runs, breaking the record previously held by Sachin Tendulkar?

- A Alastair Cook
- B Virat Kohli
- C Rahul Dravid
- D Kumar Sangakkara

Answer: B

Explanation:

Virat Kohli became only the fourth **batsman to score 10,000 ODI runs** for India and in the process, he also **broke Sachin Tendulkar's record** to become **the fastest** to reach the milestone.

Question 67

If '+' means '-', '-' means '×', '×' means '÷', and '÷' means '+' then $15 \times 3 \div 15 + 5 - 2 = ?$

- A 6
- B 10
- C 5
- D 20

Answer: B

Question 68

A loss of 25% is incurred in selling an item for Rs.2400. What should be the selling price if there should be a profit of 25% ?

- A Rs.3600
- B Rs.4000
- C Rs.4200
- D Rs.2700

Answer: B

Question 69

A train 125 m long passes a man, running at 5 km/hr in the same direction in which the train is going, in 10 seconds. What is the speed of the train ?

- A 55 km/h
- B 45 km/h
- C 54 km/h
- D 50 km/h

Answer: D

Question 70

Evaluate: $45 \text{ of } \frac{3}{5} \div 1\frac{2}{7} + 3 \text{ of } \frac{1}{3} - 10$

- A 10
- B 15
- C 14
- D 12

Answer: D

Question 71

Arrange the following fractions in ascending order.

$\frac{5}{9}, \frac{8}{3}, \frac{7}{5}, \frac{3}{5}, \frac{1}{9}$

- A $\frac{8}{3}, \frac{7}{5}, \frac{3}{5}, \frac{5}{9}, \frac{1}{9}$
- B $\frac{1}{9}, \frac{5}{9}, \frac{7}{5}, \frac{3}{5}, \frac{8}{3}$
- C $\frac{1}{9}, \frac{5}{9}, \frac{3}{5}, \frac{7}{5}, \frac{8}{3}$
- D $\frac{5}{9}, \frac{7}{5}, \frac{3}{5}, \frac{1}{9}, \frac{8}{3}$

Answer: C

Question 72

If $3*4 = 21$; $4*5 = 36$; $5*6 = 55$, then find $6*7$.

- A 67
- B 91
- C 42
- D 78

Answer: D

Question 73

Complete the series.

2, 3, 6, 18, (...)

- A 64**
- B 96**
- C 108**
- D 46**

Answer: C

Question 74

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

Statement:

Ability is poor man's wealth.

Conclusions:

- I. A poor man can earn wealth if he has ability.**
- II. A wealthy man is always able.**
- III. A poor man is always able.**
- IV. A poor man has the ability to earn wealth.**

- A Only conclusion I follows**
- B Only conclusion III follows**
- C Only conclusion IV follows**
- D Only conclusion II follows**

Answer: A

Question 75

What is the probability of getting a sum 10, when a die is rolled twice?

- A 3**
- B $\frac{1}{12}$**
- C $\frac{1}{36}$**
- D $\frac{5}{36}$**

Answer: B

Question 76

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

Statements:

- 1) Some glasses are spoons.**
- 2) All spoons are jugs.**

Conclusions:

- I. All jugs are glasses.**
- II. Some spoons are jugs.**

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

Answer: B

Question 77

Which word will best complete the relationship given below?

Bacteria : Decomposition :: Yeast : ?

- A Injection
- B Eruption
- C Fermentation
- D Conservation

Answer: C

Question 78

Elon Musk is the founder of?

- A Orbital Sciences Corporation
- B Space X
- C Virgin Galactic
- D Boeing

Answer: B

Question 79

Find the least perfect cube divisible by 2, 3, 4 and 6.

- A 1728
- B 360
- C 512
- D 216

Answer: D

Question 80

Find the ODD one out from the given options.

- A FPJ
- B LZN
- C KZM
- D HWO

Answer: C

Question 81

What is the full form of FERA ?

- A Foreign Export Revaluation Act
- B Funds Exchange Resources Act
- C Finance and Export Regulation Association
- D Foreign Exchange Regulation Act

Answer: D

Question 82

Which hormone promotes RBC production in the bone marrow?

- A Cholecystokinin
- B Serotonin
- C Somatosta
- D Erythropoietin

Answer: D

Question 83

If the image formed by a spherical mirror is virtual, then the magnification value is?

- A Infinity
- B Zero
- C Positive
- D Negative

Answer: C

Question 84

The book ,“No Spin”, is an autobiography of?

- A Shane Warne
- B Anil Kumble

C Muttiah Muralitharan

D Bishan Singh Bedi To

Answer: A

Question 85

Find the missing number in the following series.

256, 128, 64, 32, (...), 8

A 10

B 14

C 16

D 12

Answer: C

Question 86

Night blindness is caused by deficiency of?

A Vitamin B

B Vitamin C

C Vitamin A

D Vitamin D

Answer: C

Question 87

On which of the following days does the festival of Easter fall?

A Friday

B Saturday

C Thursday

D Sunday

Answer: D

Question 88

Which of the following fossil fuels has butane as its main constituent?

A Fuel oil

B LPG

C Coal

D Natural gas

Answer: B

Question 89

Vignesh puts a watch on a table in such a way that it reads 9:15 a.m. Hour hand points to the south direction. Which direction does the minute hand face?

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

Answer: C

Question 90

With which of the following has IIT-Kharagpur partnered for advanced research in 5G and artificial intelligence ?

- A Wipro
- B TCS
- C Amazon
- D Microsoft

Answer: A

Question 91

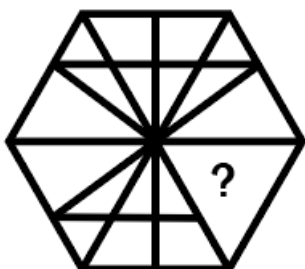
What is the Sun and the celestial bodies revolving around it called as?

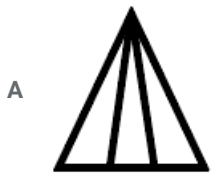
- A Galaxy
- B Milky way
- C Constellation
- D Solar system

Answer: D

Question 92

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





Answer: C

Question 93

The element, tellurium is a?

- A Metal
- B Both metal and metalloid
- C Non-metal
- D Metalloid

Answer: D

Question 94

Which of the following is an example of endoparasite?

- A Body lice
- B Ticks
- C Head lice
- D Tape worm

Answer: D

Question 95

Which of the following nerves is responsible for the sense of taste?

- A Olfactory nerve
- B Optic nerve
- C Glossopharyngeal nerve
- D Trochlear nerve

Answer: C

Question 96

Calcium hydroxide, reacts with carbon dioxide to produce?

- A Both salt and water
- B Water
- C Metal
- D Salt

Answer: A

Question 97

AIDS virus destroys the body's?

- A Circulatory system
- B Immune system
- C Red blood corpuscles
- D Liver

Answer: B

Question 98

In which Constitutional Amendment Act were the seats of Lok Sabha increased from 525 to 545?

- A 31st Constitutional Amendment Act, 1973
- B 24th Constitutional Amendment Act, 1971
- C 25th Constitutional Amendment Act, 19
- D 21st Constitutional Amendment Act, 1967

Answer: A

Question 99

Find the product of first 10 whole numbers.

- A 100
- B 0

C 55

D 101

Answer: B

Question 100

If $CAT + DOG = 50$, then $BAT + HEN = ?$

A 40

B 50

C 25

D 30

Answer: B

RRB JE
1st June 2019 Shift-2

Instructions

For the following questions answer them individually

Question 1

Which city hosted the 2012 Olympic Games?

- A Paris
- B Barcelona
- C Berlin
- D London

Answer: D

Question 2

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





Answer: B

Explanation:

If we complete the above figure, then the missing pattern is represented by the red colour.



=> Ans - (B)

Question 3

In which of the following countries has Google opened the first African Artificial Intelligence lab recently?

- A Algeria
- B Ethiopia
- C Morocco
- D Ghana

Answer: D

Question 4

A cyclist goes from a place P to Q; first at 4 km/h and later at 5 km/h in 1 hour 24 minutes altogether. If the distances covered in the first and second part of the journey are in the ratio 2 : 1, when did the cyclist change his speed after start?

- A 24 minutes
- B 1 hour
- C 45 minutes
- D 30 minutes

Answer: B

Explanation:

Let total distance of the journey be $3x$ km..

Thus, the cyclist travelled $2x$ km at 4 km/hr and x km at 5 km/hr

Using, time = distance/speed

$$\Rightarrow \frac{2x}{4} + \frac{x}{5} = 1 + \frac{24}{60}$$

$$\Rightarrow \frac{10x+4x}{20} = \frac{7}{5}$$

- -

$$\Rightarrow \frac{7x}{10} = \frac{7}{5}$$

$$\Rightarrow x = 2$$

Thus, total distance = 6 km, and the cyclist change his speed after travelling 4 km in = $\frac{4}{4} = 1$ hour

\Rightarrow Ans - (B)

Question 5

Which offer is better?

- 1) Two successive discounts of 10% and 20%
- 2) Single discount of 30%

- A (2)
- B (1)
- C Cannot be determined
- D Both (1) & (2) are the same

Answer: A

Explanation:

Let the marked price of a product is Rs. 100

1) Effective discount after two successive discounts of 10% and 20%

$$= 10 + 20 - \frac{10 \times 20}{100}$$
$$= 30 - 2 = 28$$

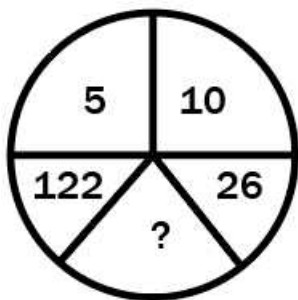
2) Single discount of 30%

Thus, 2) is better.

\Rightarrow Ans - (A)

Question 6

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



- A 54
- B 50
- C 61
- D 58

Answer: B

Explanation:

The pattern followed is starting from 5, and going in clockwise direction, pattern followed is : $n^2 + 1$, where n is prime number.

$$(2)^2 + 1 = 5$$

$$(3)^2 + 1 = 10$$

$$(5)^2 + 1 = 26$$

$$(7)^2 + 1 = \mathbf{50}$$

$$(11)^2 + 1 = 122$$

=> Ans - (B)

Question 7

The variance of a set of value x_1, x_2, \dots, x_n , is given by which of the following formulae?

A Latek 1

B Latek 2

C Latek 3

D Latek 4

Answer: A

Question 8

Find the ODD one out from the given options.

A E : Z

B B : F

C C : J

D D : Q

Answer: B

Explanation:

If A=1, B=2, C=3 and so on, the pattern here followed is :

$$(A) : E \equiv (5)^2 + 1 = 26 \equiv Z$$

$$(B) : B \equiv (2)^2 + 1 = 5 \equiv E \neq F$$

$$(C) : C \equiv (3)^2 + 1 = 10 \equiv J$$

$$(D) : D \equiv (4)^2 + 1 = 17 \equiv Q$$

=> Ans - (B)

Question 9

Complete the series.

7, 26, 63, 124, 215, 342, (....)

A 481

B 421

C 391

D 511

Answer: D

Explanation:

The numbers are of the form $n^3 - 1$

$$(2)^3 - 1 = 7$$

$$(3)^3 - 1 = 26$$

$$(4)^3 - 1 = 63$$

$$(5)^3 - 1 = 124$$

$$(6)^3 - 1 = 215$$

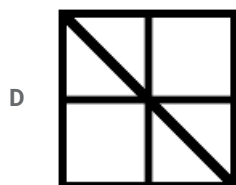
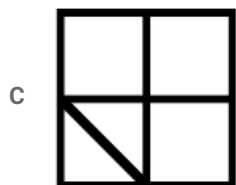
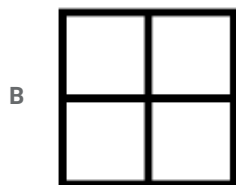
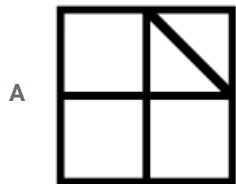
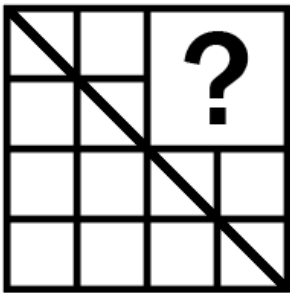
$$(7)^3 - 1 = 342$$

$$(8)^3 - 1 = 511$$

=> Ans - (D)

Question 10

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



Answer: B

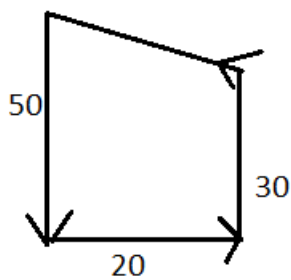
Question 11

Going 50 m to the south of my house, I turn left and go another 20 m. Then turning to the north, I go 30 m and then start walking to my house. In which direction am I walking now?

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

Answer: A

Explanation:



now he is walking in north west direction

Question 12

Which word will best complete the relationship given below?

Boat : Oar :: Bicycle : ?

- A Seat
- B Road
- C Wheel
- D Pedal

Answer: D

Question 13

From the full moon day counted as day 1, on which day the moon becomes invisible?

- A Thirteenth day
- B Twelfth day
- C Fifteenth day
- D Tenth day

Answer: C

Question 14

The mean of a set of 12 numbers is 24. If one item is excluded, the mean gets reduced by 3. What is the excluded number?

- A 62
- B 45
- C 57
- D 55

Answer: C

Explanation:

mean of a set of 12 numbers is 24.

total of 12 numbers = $12 \times 24 = 288$

one item is excluded the total numbers becomes 11 and the mean gets reduced by 3

let the excluded number be x and the new mean = 21

according to the question

$$\frac{288-x}{11} = 21$$

solving x = 57

excluded number = 57

Question 15

The mineral which controls the functioning of thyroid is-

- A Calcium
- B Iodine
- C Magnesium
- D Phosphorous

Answer: B

Question 16

P and Q agree to do a job for Rs.850. Q alone can do it in 40 days. But P is twice as fast as Q. In order to finish the job earlier, they take the help of R and all three finish the work in 8 days. How much should R be paid for his work?

- A Rs.340
- B Rs.240
- C Rs.300
- D Rs.320

Answer: A

Explanation:

P is twice as fast as Q

efficiency of P = 2

efficiency of Q = 1

with the help of R they complete the job in 8 days

efficiency of P + Q + R = 2 + 1 + 2 = 5

earning per person per day = $\frac{850}{5} = 170$

So R's earned = $2 \times 170 = 340$

Question 17

Penicillin, an antibiotic medicine is obtained from-

- A Mushrooms
- B Crude oil
- C Mould
- D Dead animals

Answer: C

Question 18

Simplify: $0.032 \times 0.2 + 0.32 \times 0.002$

Latek

- A 0.00064
- B 0.00704
- C 0.0664
- D 0.0064

Answer: B

Explanation:

$$0.032 \times 0.2 + 0.32 \times 0.002$$

$$0.032 \times 0.2 = 0.0064$$

$$0.32 \times 0.002 = 0.00064$$

$$0.0064 + 0.00064 = 0.00704$$

Question 19

In a spring balance, which part is stretched when a force is applied ?

- A Rubber band
- B Coiled spring
- C Elastic thread
- D Nylon band

Answer: B

Question 20

Which of the following is the outer covering of teeth?

- A Enamel
- B Gum
- C Skin
- D Ivory

Answer: A

Question 21

Find the greatest number that will exactly divide 25, 35, 40 and 30.

- A 20
- B 35
- C 5
- D 15

Answer: C

Explanation:

In all above option only 5 will be exactly divide by 25, 35, 40 and 30.

Factor of 25 = 5×5

Factor of 35 = 5×7

Factor of 40 = $5 \times 2 \times 2 \times 2$

Factor of 30 = $5 \times 3 \times 2$

H.C.F. of 25, 35, 40 and 30 = 5

(\therefore Common factor 25, 35, 40 and 30 is 5)

Question 22

Which of the following is an example of ectoparasite?

- A Tape worm
- B Mosquito
- C Hook worm
- D Bacteria

Answer: B

Question 23

The ratio between the sides of two regular polygons is 1 : 2. Ratio between their interior angles is 2 : 3. Find the number of sides of the polygons.

A 6, 12

B 5, 10

C 7, 14

D 4, 8

Answer: D

Explanation:

each interior angle = $\frac{(n-2)180^\circ}{n}$

according to the question

$$\frac{(n-2)180^\circ}{n} = \frac{(2n-2)180^\circ}{2n} = \frac{2}{3}$$

$$\frac{(n-2)180 \times 2n}{n(2n-2)180} = \frac{2}{3}$$

$$\frac{n-2}{n-1} = \frac{2}{3}$$

$$3n - 6 = 2n - 2$$

$$n = 4$$

sides are $n = 4$

$$2n = 2 \times 4 = 8$$

Question 24

In a certain code, 'CENTRAL' is written as 'LARTNEC'. How is 'SEMINAR' written in that code?

A RANIMES

B RANIEMS

C RANEIMS

D RAINEMS

Answer: A

Question 25

Three beakers have capacity of 250 ml, 650 ml and 200 ml each. 682 ml of juice is poured into the three beakers such that the same fraction of each is filled. How much is poured into the smallest beaker?

A 122 ml

B 152 ml

C 132 ml

D 124 ml

Answer: D

Explanation:

as juice is poured in such a way that the same fraction of each beaker is filled

$$\text{sum} = 250 + 650 + 200 = 1100 \text{ ml}$$

$$\text{smallest beaker is filled with } \frac{200}{1100} \times 682 = 124 \text{ ml}$$

Question 26

Which of the following departments comes under the Ministry of Finance in India?

- A Department of Expenditure
- B All of the options
- C Department of Revenue
- D Department of Economic Affairs

Answer: B

Question 27

In a certain code, 'GIVE' is written as 21@# and 'FAIL' is written as 4%19. How is 'FEAL' written in that code?

- A 41%@
- B 24@#
- C 4#%9
- D 4#%1

Answer: C

Question 28

Reactions involving loss of hydrogen is known as-

- A Oxidation reaction
- B Combination reaction
- C Reduction reaction
- D Decomposition reaction

Answer: A

Question 29

Which of these Indian states has a coastline on the Arabian sea?

- A Gujarat
- B West Bengal
- C Odisha
- D Andhra Pradesh

Answer: A

Question 30

Find the missing number in the following series.

126, 129, (...), 147, 171

A 141

B 145

C 132

D 135

Answer: D

Explanation:

126, 129, 135, 147, 171

$$126 + 3 = 129$$

$$129 + 6 = 135$$

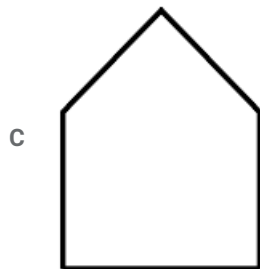
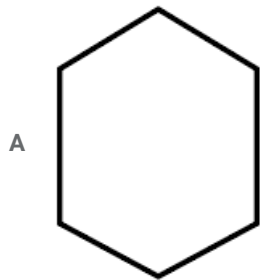
$$135 + 12 = 147$$

$$147 + 24 = 171$$

here difference of 2 consecutive terms multiplied by 2 to get the difference of next two terms

Question 31

Find the ODD one out from the given options.



Answer: C

Question 32

When does an object float on a liquid?

- A When the density of the object is more than that of the liquid
- B When the object has very high density
- C When both the liquid and the object have the same densities
- D When the density of the object is less than that of the liquid

Answer: D

Question 33

C_nH_{2n} is the general formula of _____ hydrocarbon.

- A Alkanes
- B Both alkanes and alkynes
- C Alkynes
- D Alkenes

Answer: D

Question 34

Which is largest of the following numbers that divides 17, 42, 93 with remainders 4, 3, 15 respectively?

- A 78
- B 17
- C 13
- D 89

Answer: C

Explanation:

By option C,

When 17 is divided by 13 then remainder = 4

When 42 is divided by 13 then remainder = 3

When 93 is divided by 13 then remainder = 15

∴ The largest number will be 13.

Question 35

If '+' means 'x', '-' means '+', 'x' means '÷' and '÷' means '-', then $6 + 7 \times 3 - 8 \div 20 = ?$

Latek

- A 1
- B -3
- C 2
- D 7

Answer: C

Explanation:

'+' means 'x', '-' means '+', 'x' means '÷' and '÷' means '-' then substituting we get

$$6 \times 7 \div 3 + 8 - 20$$

$$6 \times \frac{7}{3} + 8 - 20$$

$$14 + 8 - 20 = 2$$

Question 36

Which of the following properties is NOT shown by non-metals?

- A Ductility
- B Sonorous
- C Malleability
- D All of the options

Answer: D

Question 37

_____ is also known as blood sugar.

- A Glucose
- B Trehalose
- C Maltose
- D Sucrose

Answer: A

Question 38

Complete the series.

5, 6, 8, 12, 20, 36, (...)

- A 68
- B 75
- C 81
- D 72

Answer: A

Explanation:

5, 6, 8, 12, 20, 36, (...)

$$5 + 1 = 6$$

$$6 + 2 = 8$$

$$8 + 4 = 12$$

$$12 + 8 = 20$$

$$20 + 16 = 36$$

$$36 + 32 = 68$$

common difference of 2 consecutive terms are multiplied by 2 to get the next term

Question 39

Which vitamin gets destroyed on heating?

A D

B B1

C E

D A

Answer: B

Question 40

At a given temperature in any gas, liquid or solid, there are particles with different amounts of-

A Potential energy

B Electrical energy

C Mechanical energy

D Kinetic energy

Answer: D

Question 41

Two right circular cylinders of equal volume have their heights in the ratio 1 : 2. Find the ratio of their radii.

A 1:2

B 2:1

C $1 : \sqrt{2}$

D $\sqrt{2} : 1$

Answer: D

Explanation:

V1 and V2 be the volumes of the cylinder

given that $V1 = V2$

$$V_1 = \pi r_1^2 h_1$$

$$V_2 = \pi r_2^2 h_2$$

$$\pi r_1^2 h_1 = \pi r_2^2 h_2$$

$$r_1^2 h_1 = r_2^2 h_2$$

$$\text{given that } \frac{h_1}{h_2} = \frac{2}{1}$$

$$\frac{r_1^2}{r_2^2} = \frac{h_2}{h_1} = \frac{1}{2}$$

$$\text{solving } \frac{r_1}{r_2} = \frac{\sqrt{2}}{1}$$

Question 42

Two taps can separately fill a cistern in 20 minutes and 25 minutes. Both taps are open for 10 minutes after which the slower one is closed. How long will it take to fill the remaining portion by the other tap alone?

- A 2 minutes
- B 4 minutes
- C 10 minutes
- D 5 minutes

Answer: A

Explanation:

$$\text{workdone} = \text{efficiency} \times \text{time}$$

Two taps P1 and P2 can separately fill a cistern in 20 minutes and 25 minutes.

$$\text{work done} = \text{LCM}(20, 25) = 100$$

$$\text{efficiency of P1} = \frac{100}{20} = 5$$

$$\text{efficiency of P2} = \frac{100}{25} = 4$$

Both taps are open for 10 minutes after which the slower one is closed.

$$\text{workdone} = (\text{efficiency of P1} + \text{efficiency of P2}) \times 10 + \text{efficiency of P1} \times x$$

where x = time required by P1 to fill the remaining portion by the other tap alone

substituting

$$100 = (5 + 4) \times 10 + 5x$$

$$\text{solving } x = 2 \text{ minutes}$$

Question 43

Sodium carbonate is a basic salt, because it is a salt of-

- A Strong acid and strong base
- B Weak acid and strong base
- C Strong acid and weak base
- D Weak acid and weak base

Answer: B

Question 44

Which of these trees is used for its timber?

- A Rosewood
- B Mahogany
- C All of the options
- D Teak

Answer: C

Question 45

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

Statement:

$$N \leq R > Q \geq S$$

Conclusions:

I. $R \geq S$

II. $S < R$

III. $N < Q$

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

Answer: D

Explanation:

$$N \leq R > Q \geq S$$

conclusion I : $R \geq S$

$R \geq S$ is not true . from the statement we have $R > Q \geq S$

so $R > S$ is true but $R \geq S$ not true

thus conclusion I not possible

conclusion II : $S < R$

from the statement we have $R > S$

thus $S < R$ is true

conclusion III : $N < Q$

from the statement we cannot form a conclusion between N and Q

thus not true

only conclusion II is true

Question 46

Article 17 of Indian Constitution deals with-

- A Right to education
- B Abolition of titles
- C Abolition of untouchability

D Equality before law

Answer: C

Question 47

Find $(1 - \sin^2\theta)(\tan^2\theta + 1) - 1$

A 2

B $\operatorname{cosec}^2\theta$

C -2

D 0

Answer: D

Explanation:

$$\sin^2\theta + \cos^2\theta = 1 \dots\dots\dots(1)$$

$$1 + \tan^2\theta = \sec^2\theta \dots\dots\dots(2)$$

$$\sec^2\theta = \frac{1}{\cos^2\theta} \dots\dots\dots(3)$$

$$(1 - \sin^2\theta)(\tan^2\theta + 1) - 1$$

solving

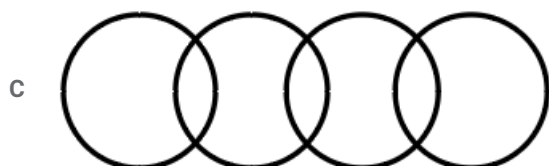
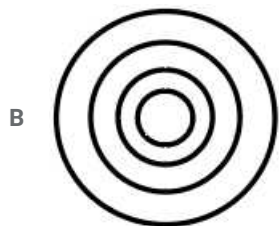
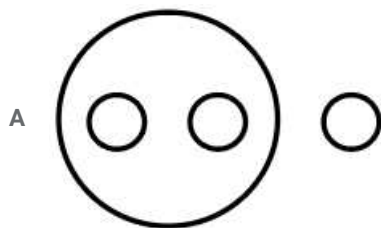
$$(\cos^2\theta)(\sec^2\theta) - 1$$

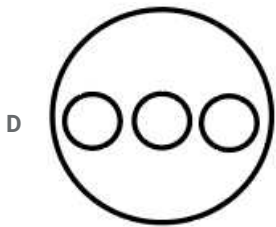
$$\cos^2\theta \times \frac{1}{\cos^2\theta} - 1 = 1 - 1 = 0$$

Question 48

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

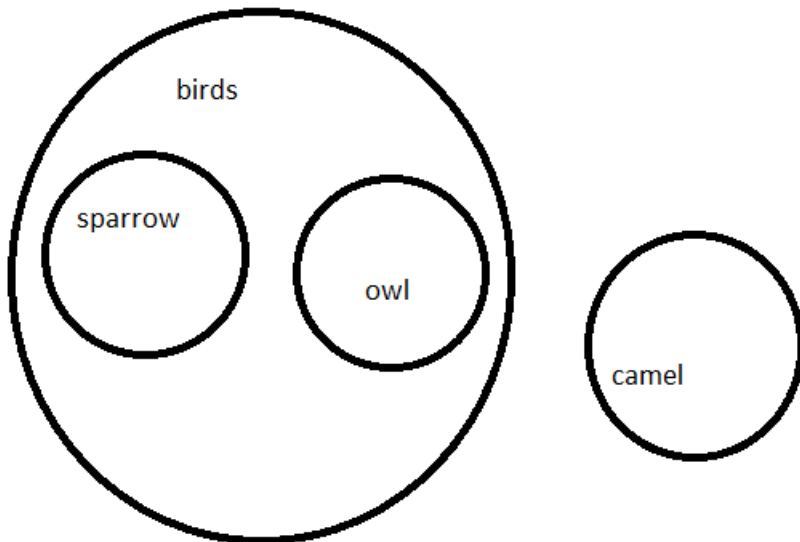
Sparrow, Owl, Camel, Birds





Answer: A

Explanation:



sparrow and owl are different birds but belongs to the class 'birds'

camel is an animal not belongs to the class birds

hence option A represents the correct relationship

Question 49

When sound hits a solid surface what will happen?

- A Sound gets absorbed
- B Sound gets refracted
- C Sound gets absorbed and reflected
- D Sound gets reflected

Answer: C

Question 50

Sum and difference of the ages of two children are 33 and 3 respectively. What is the age of the elder child?

- A 24 years
- B 18 years
- C 15 years
- D 16 years

Answer: B

Explanation:

let the ages of 2 children be x,y

sum of their ages = 33

$$x + y = 33 \dots\dots\dots(1)$$

difference of their ages = 3

$$x - y = 3 \dots\dots\dots(2)$$

solving (1) and (2)

$$x = 18$$

substitute x= 18 in (1)

$$18 + y = 33$$

$$y = 15$$

thus age of elder child = 18

Question 51

What comes in the place of '*'?

$$(216)^{1.3} \times (36)^{1.8} + (6)^{0.5} = 6^*$$

- A 3
- B 4
- C 5
- D 7

Answer: D

Question 52

Who wrote the lyrics of the song 'Sare Jahan Se Achcha'?

- A Mohammed Iqbal
- B Rabindranath Tagore
- C Munshi Premchand
- D Kavi Pradeep

Answer: A

Question 53

Find the ODD one out from the given options.

- A 111
- B 666
- C 888
- D 222

Answer: A

Question 54

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

Statements:

- 1) Some actors are writers.
- 2) All writers are dancers.
- 3) No actor is a director.

Conclusions:

- I. No writer is an actor.
- II. Some actors are dancers.
- III. Some writers are not directors.

- A Only conclusions II and III follow
- B Only conclusions I and II follow
- C All conclusions follow
- D Only conclusion I follows

Answer: A

Question 55

How do green plants in the sea help fish to respire?

- A They give out oxygen and carbon dioxide simultaneously
- B They take oxygen and give out carbon dioxide
- C They give out oxygen
- D They give out carbon dioxide

Answer: C

Question 56

What is the speed of a sound wave whose frequency is 2000 Hz and whose wavelength is 0.2 m?

- A 400 m/s
- B 200 m/s
- C 300 m/s
- D 450 m/s

Answer: A

Explanation:

$$frequency = \frac{\text{speed of the sound wave}}{\text{wavelength}}$$

given

frequency = 2000 Hz

wavelength = 0.2 m

substituting

$$2000 = \frac{c}{0.2}$$

solving

speed of a sound wave = 400 m/s

Question 57

Alkynes are hydrocarbons which have

- A Single bonds
- B Triple bonds
- C Double bonds
- D More than four bonds

Answer: B

Question 58

When was the internal emergency declared in India during the period of Indira Gandhi as Prime Minister?

- A 1973
- B 1978
- C 1975
- D 1984

Answer: C

Question 59

An article bought at 20% discount is sold at 25% profit. What is the profit or loss compared with the original price?

- A No profit or loss
- B 20% loss
- C 10% loss
- D 10% profit

Answer: A

Explanation:

if 20% discount is given on marked price then selling price = 80

since the profit% is 25%

$$100 == 80$$

$$125 == x$$

$$\text{solving } x = 80 \times \frac{125}{100} = 100$$

here original cost price and selling price are equal

hence no profit or loss

Question 60

The first Asian games were held in-

- A Pakistan
- B China
- C India
- D Iran

Answer: C

Question 61

Which of the following formula states the relation between current, potential difference and resistance?

- A $R = \frac{V}{I}$
- B $R = \frac{I}{V}$
- C $I = VR$
- D $R = VI$

Answer: A

Question 62

Which of the following is the least toxic of nitrogenous wastes?

- A Creatinine
- B Urea
- C Creatine
- D Uric acid

Answer: D

Question 63

Total age of two members in a family four years hence will be 64 years. Four years back their ages was in the ratio 3 : 1. What is the age of the younger of the two?

- A 10
- B 16
- C 12
- D 15

Answer: B

Explanation:

let the ages of two persons be x and y

4 years back their ages was in the ratio 3 : 1

$$\frac{x-4}{y-4} = \frac{3}{1}$$

solving

$$x - 4 = 3y - 12$$

$$3y - x = 8 \dots\dots\dots(1)$$

Total age of two members in a family four years hence will be 64 years

$$x + y + 8 = 64$$

$$x + y = 56 \dots\dots\dots(2)$$

from (2) $x = 56 - y$

substitute x in (1)

$$8 = 3y - (56 - y)$$

solving $y = 16$

$$x + 16 = 56$$

$$x = 40$$

therefore age of younger person is 16

Question 64

Who launched the countrywide 'Pulse Polio Programme 2019?'

- A Arun Jaitley
- B Narendra Modi
- C Ram Nath Kovind
- D Dr.Harsh Vardhan

Answer: C

Question 65

What is the chemical name of milk of magnesia?

- A Ammonium hydroxide
- B Sodium hydroxide
- C Magnesium hydroxide
- D Calcium hydroxide

Answer: C

Question 66

If the Simple Interest on a sum of money at 5% for 3 years is Rs.1200, what will be the Compound Interest for the same period and rate for the same sum?

- A Rs.9261
- B Rs.1461

C Rs.1561

D Rs.1261

Answer: D

Explanation:

$$SI = \frac{PNR}{100}$$

$$1200 = \frac{P \times 3 \times 5}{100}$$

solving P = 8000

CI :

$$\begin{aligned} Amt &= P \left(1 + \frac{r}{100}\right)^n \\ &= 8000 \left(1 + \frac{5}{100}\right)^3 \\ &= 9261 \end{aligned}$$

Amount = principal + interest

$$9261 = 8000 + CI$$

solving CI = 1261

Question 67

Which of the following countries successfully test fired the short range Quick Reaction Surface-to-Air Missile (QRSAM) in 2019?

A India

B Russia

C Pakistan

D China

Answer: A

Question 68

The cation present in sodium chloride (NaCl) is-

A Cl^+

B Na^-

C Na^+

D Cl^-

Answer: C

Question 69

In $\triangle ABC$, $\angle B = 60^\circ$ $\angle C = 40^\circ$ I is the incentre then find $\angle BIC$

A 80

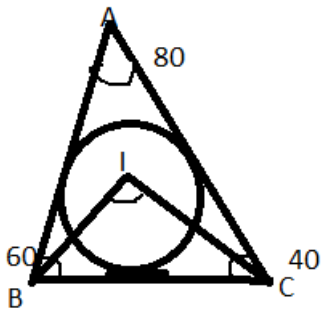
B 130

C 50

D 40

Answer: B

Explanation:



In $\triangle ABC$

given $\angle ABC = 60^\circ$

$\angle ACB = 40^\circ$

therefore $\angle BAC = 80^\circ$ ($180 - (60 + 40)$)

I is the incenter

incenter is the point where angle bisectors of a triangles meet

$$\angle IBC = \frac{60}{2} = 30^\circ$$

$$\angle ICB = \frac{40}{2} = 20^\circ$$

$$\angle BIC = 180 - (30 + 20) = 180 - 50 = 130^\circ$$

Question 70

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

Eight persons— Arun, Renu, Keerthi, Balaji, Abarna, Senthil, Ajitha and Rajesh sit in a row having chairs numbered one to eight in ascending order from left to right. They all are facing north direction.

Keerthi sits on the chair numbered six. There are exactly two persons between Keerthi and Arun. Renu and Rajesh always sit adjacent to each other. Ajitha sits adjacent to neither Arun nor Keerthi. Abarna never sits on a chair having an odd number on it. Neither Renu nor Rajesh sits on chair numbered four. There is only one person between Senthil and Renu. Abarna sits on the right (not an immediate right) of Balaji, and Balaji never sits adjacent to Senthil. How many persons sit between Renu and Arun?

A One

B Three

C Two

D Four

Answer: B

Question 71

Find the area of a rhombus, one of its sides being 25 cm and one of the diagonals being 30 cm.

A 720cm^2

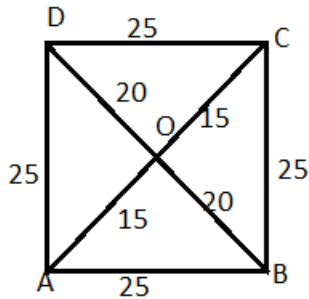
B $542cm^2$

C $600cm^2$

D $480cm^2$

Answer: C

Explanation:



let diagonal CA = 30 cm

$$CA = OA + OC = 15 + 15 = 30$$

from triangle OCB

$$BC^2 = OB^2 + OC^2$$

$$25^2 = OB^2 + 15^2$$

$$625 = OB^2 + 225$$

$$OB^2 = 400$$

$$OB = 20$$

$$DB = OD + OB = 20 + 20 = 40$$

$$\text{area of rhombus} = \frac{1}{2} d_1 d_2$$

$$= \frac{1}{2} \times 30 \times 40$$

$$= 600cm^2$$

Question 72

Two taps P and Q can fill a cistern in 30 and 20 minutes respectively. Both P and Q were opened for a few minutes after which P was closed. The rest of the cistern was filled by Q in 5 minutes. After how many minutes was pipe P closed?

A 10 minutes

B 12 minutes

C 9 minutes

D 8 minutes

Answer: C

Explanation:

$$\text{workdone} = \text{efficiency} \times \text{time}$$

$$\text{work done} = \text{LCM}(30,20)$$

$$= 60$$

$$\text{efficiency of pipe P} = \frac{60}{30} = 2$$

$$\text{efficiency of pipe Q} = \frac{60}{20} = 3$$

according to question

$$(efficiency\ of\ P + efficiency\ of\ Q)x + efficiency\ of\ Q \times 5 = 60$$

where x = time

$$(2 + 3)x + 3 \times 5 = 60$$

solving x = 9

Question 73

Find the missing group of alphabets in the following series.

TA, RE, (...), NM, LQ

A PN

B GF

C PI

D WI

Answer: C

Explanation:

TA, RE, PI, NM, LQ

first letter of each term decreased by 2

second letter of each term decreased by 4

Question 74

A rat runs 20 m towards east and turns right and runs 10 m and turns right and runs 9 m; and again turns left and runs 5 m, and then turns left again and runs 12 m and finally turns left and runs 6 m. Now which direction is the rat facing?

A East

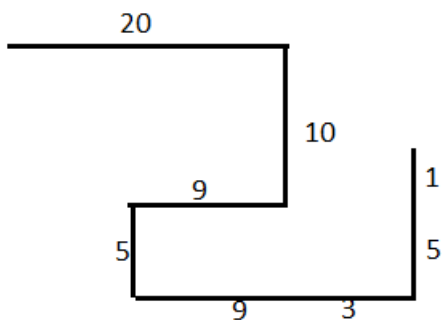
B West

C North

D South

Answer: C

Explanation:



now rat facing in north direction

Question 75

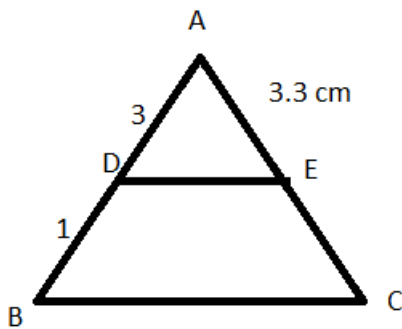
In $\triangle ABC$, D and E are points on sides AB and AC respectively such that $DE \parallel BC$ and $AD : DB = 3 : 1$. If $EA = 3.3$ cm, then find the value of AC.

Latek

- A 4 cm
- B 4.4 cm
- C 5.5 cm
- D 1.1 cm

Answer: B

Explanation:



given that $\frac{AD}{BD} = \frac{3}{1}$

In $\triangle ABC$

$$\frac{AD}{BD} = \frac{AE}{EC}$$

$$\frac{3}{1} = \frac{3.3}{EC}$$

solving $EC = 1.1$

now $AC = AE + EC$

$$AC = 3.3 + 1.1 = 4.4 \text{ cm}$$

Question 76

When a light ray enters from a denser medium to a rarer medium, say from glass to air, how does the light ray bend?

- A Towards normal
- B Bends at 90 degree from normal
- C Away from the normal
- D Bends and merges with the normal

Answer: C

Question 77

Two articles are sold for Rs.840 and Rs.960 at 20% gain and 4% loss respectively. What is the overall gain or loss percent?

A $5\frac{5}{17}$ %gain

B $5\frac{15}{17}$ %gain

C $5\frac{5}{17}$ %loss

D $5\frac{15}{17}$ %loss

Answer: B

Explanation:

1st article :

$$SP1 = 840$$

$$P1 = 20\%$$

$$CP1 = 840 \times \frac{100}{120} = 700$$

2nd article :

$$SP2 = 960$$

$$L2 = 4\%$$

$$CP2 = 960 \times \frac{100}{96} = 1000$$

$$\text{total SP} = SP1 + SP2$$

$$= 840 + 960$$

$$= 1800$$

$$\text{total CP} = CP1 + CP2$$

$$= 700 + 1000$$

$$= 1700$$

$$\text{gain \%} = \frac{SP-CP}{CP} \times 100$$

$$= \frac{1800-1700}{1700} \times 100$$

$$= 5\frac{15}{17} \% \text{ gain}$$

Question 78

The product of two numbers is 192 and their sum is 28. Find the smallest of these two numbers.

A 16

B 18

C 14

D 12

Answer: D

Explanation:

let the numbers be x,y

$$\text{product } xy = 192 \dots\dots\dots(1)$$

$$\text{sum } x + y = 28 \dots\dots\dots(2)$$

$$\text{from (2) } x = 28 - y$$

substitute in (1)

$$(28 - y)y = 192$$

$$28y - y^2 = 192$$

$$y^2 - 28y + 192 = 0$$

solving $y = 12$

$$x + 12 = 28$$

$$x = 16$$

Question 79

Who among the following became the first woman cricketer to play 200 ODIs?

- A Deepti Sharma
- B Goswami
- C Mithali Raj
- D Charlotte Edwards

Answer: C

Question 80

If 'cinto baoli tsi nzro' means 'her village is Sarurpur', 'mhi cinto keepi tsi oind' means 'her first love is literature', and 'oind geit tsi cinto pki' means 'literature collection is her hobby', which word would mean 'literature'?

- A baoli
- B cinto
- C oind
- D geit

Answer: C

Question 81

With which sports is Walker Cup associated?

- A Hockey
- B Golf
- C Billiards
- D Softball

Answer: B

Question 82

Which of the following fossil fuels has methane as its main constituent?

- A Natural gas
- B Coal

C Petroleum gas

D LPG

Answer: A

Question 83

Isotopes of an element have-

A Different atomic numbers

B The same physical properties

C Different number of neutrons

D Different chemical properties

Answer: C

Question 84

The blood pressure of a young male human being is normally -

A $\frac{110}{70}$

B $\frac{140}{100}$

C $\frac{120}{80}$

D $\frac{135}{90}$

Answer: C

Question 85

Simplify: $\frac{(0.1 \times 0.1 \times 0.1 + 0.2 \times 0.2 \times 0.2)}{0.5 \times 0.5 \times 0.5 + 1}$

A $\frac{3}{1.125}$

B 0.08

C 0.008

D $\frac{2}{125}$

Answer: C

Explanation:

$$\frac{0.001 + 0.008}{0.125 + 1}$$

$$\frac{0.009}{1.125}$$

$$\frac{1}{125} = 0.008$$

Question 86

Which word will best complete the relationship given below?

Blood : Vein :: Oil : ?

- A Car
- B Petrol
- C Pipeline
- D Engine

Answer: C

Question 87

Simplify: $(2.5/0.0005)/(25/0.05)$

- A 10
- B $\frac{1}{50}$
- C $\frac{1}{10}$
- D 50

Answer: A

Explanation:

$$(2.5/0.0005)/(25/0.05)$$

$$\Rightarrow 5000/500 = 10$$

Question 88

What sum will yield Rs.540 as Simple Interest at 4% for 7.5 years?

- A Rs.1600
- B Rs.1400
- C Rs.1800
- D Rs.1200

Answer: C

Explanation:

$$SI = \frac{PNR}{100}$$

$$540 = \frac{P \times 7.5 \times 4}{100}$$

$$P = \frac{540 \times 100}{4 \times 7.5}$$

solving P =1800

Question 89

In 10 seconds, a charge of 25 Coulombs leaves a battery. How much current flows?

- A 2.5 Ampere
- B 25 Ampere
- C 250 Ampere
- D 0.25 Ampere

Answer: A

Question 90

Which of the following are found on the right-hand side of the periodic table towards the top?

- A Both metals and non-metals
- B Non-metals
- C Metalloids
- D Metals

Answer: B

Question 91

If a bus is located at 5 meters from a convex mirror and the image is formed at 2.5 meters at the back of the mirror, then what is the magnification of the mirror?

- A 0.2
- B -0.5
- C -0.2
- D 0.5

Answer: D

Explanation:

Distance of object = 5 meters

Distance of image = 2.5 meters

The formula of magnification of the mirror = distance of image/distance of object

⇒ Magnification of the mirror = $2.5/5 = 0.5$

Question 92

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

Statements:

- 1) No mango is apple.
- 2) No apple is guava.

Conclusions:

- I. Some mangoes are guavas.
- II. Some guavas are apples.

- A Only conclusion II follows
- B Only conclusion I follows

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

Answer: D

Question 93

If $a + b + c = 2s$, then find the value of $(s - a)^3 + (s - b)^3 + 3(s - a)(s - b)c$.

- A c^2
 B ac
 C $2s$
 D c^3

Answer: D

Explanation:

$$a + b + c = 2s$$

$$(s - a)^3 + (s - b)^3 + 3(s - a)(s - b)c$$

$$(s - a)^3 + (s - b)^3 + 3(s - a)(s - b)(s - a + s - b)$$

let $x = s - a$ and $y = s - b$

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

$$(\because (a + b)^3 = a^3 + b^3 + 3ab(a + b))$$

$$(s - a + s - b)^3 = c^3$$

Question 94

The average of 3 consecutive integers is 'k'. If the next two numbers are added, then the new average is:

- A $k + 3$
 B $k + 2$
 C $k + 1$
 D k

Answer: C

Explanation:

let consecutive integers be $x, x + 1, x + 2$

average of 3 consecutive integers is 'k'

sum of 3 consecutive integers = $3k$

$$\frac{x + x + 1 + x + 2}{3} = k$$

$$\frac{3x + 3}{3} = k$$

$$x + 1 = k$$

$$x = k - 1$$

If the next two numbers are added,

$$\frac{3k + x + 3 + x + 4}{5}$$

$$\frac{3k + 2x + 7}{5}$$

$$\frac{3k+2(k-1)+7}{5}$$

$$\frac{5k+5}{5} = k + 1$$

Question 95

Tipaimukh Dam is in which of the following states?

- A Tripura
- B Mizoram
- C Nagaland
- D Manipur

Answer: D

Question 96

A train moving at 40 km/h will take 2 hours 15 minutes more to cover a certain distance than when the speed is doubled. What is the distance ?

- A 220 km
- B 200 km
- C 180 km
- D 160 km

Answer: C

Explanation:

$$speed = \frac{distance}{time}$$

let the distance be d

then according to the question

$$\frac{9}{4} = \frac{d}{80} - \frac{d}{40}$$

$$\frac{9}{4} = \frac{40 \times d}{80 \times 40}$$

$$\frac{d}{80} = \frac{9}{4}$$

$$d = \frac{9}{4} \times 80 = 180km$$

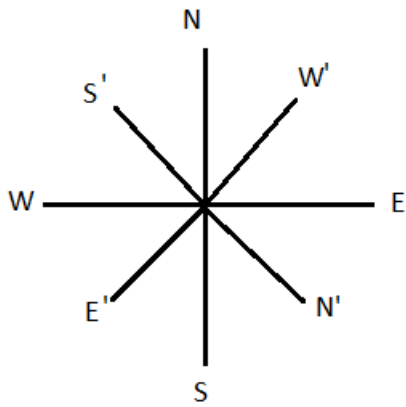
Question 97

If north west becomes south and north east becomes west and so on, what will be the south west?

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

Answer: C

Explanation:



if north west becomes south then south east becomes north
same way if north east becomes west then south west becomes east

Question 98

Which of the following governments launched the Jal Amrutha scheme in 2019?

- A Andhra Pradesh
- B Kerala
- C Tamil Nadu
- D Karnataka

Answer: D

Question 99

Who among the following founded a weekly newspaper 'Commonweal' in 1914?

- A Lala Lajpat Rai
- B Annie Besant
- C Madan Mohan Malviya
- D Motilal Nehru

Answer: B

Question 100

If 'DELHI' is coded as 'CCIDD', how will 'BOMBAY' be coded?

- A AMJXSV
- B AMJVXS
- C AMJXVS
- D AJMTVT

Answer: C

RRB JE
1st June 2019 Shift-3

Instructions

For the following questions answer them individually

Question 1

To monitor the foetal growth, the latest technique of _____ is used.

- A Chemotherapy
- B CAT Scan
- C Ultrasonics
- D Eudiometry

Answer: C

Question 2

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

- A $-(2+\sqrt{2})$
- B $2+\sqrt{2}$
- C $-2(1+\sqrt{2})$
- D $1-2\sqrt{2}$

Answer: C

Explanation:

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

$=\frac{2(1+\sqrt{2})}{(1-\sqrt{2})(1+\sqrt{2})}$ (multiply the numerator and denominator by $(1+\sqrt{2})$).

$$=-2(1+\sqrt{2}).$$

C is correct choice.

Question 3

Ethyl alcohol is used as a/an?

- A Fuel in spirit lamps
- B Alcoholic beverage
- C Solvent
- D All of the options

Answer: D

Question 4

In a certain code language, 'pat zoo sim' means 'eat good mangoes', 'pus sim tim' means 'mangoes and sweets' and 'tim zoo kit' means 'purchase good sweets'. Which word in that language means 'eat'?

- A pus
- B pat
- C sim
- D tim

Answer: B

Question 5

Anemia is caused in man due to the deficiency of -

- A Vitamin B
- B Iron
- C Folic acid
- D Vitamin A

Answer: B

Question 6

The process in which acids and bases react to form salts and water is called _____ reaction.

- A Sublimation
- B Hydrogenation
- C Halogenation
- D Neutralisation

Answer: D

Question 7

If $\text{Cosec } \alpha = \sqrt{2}$ Evaluate $\frac{2\sin^2 \alpha + 3\cos^2 \alpha}{\text{cosec}^2 \alpha + \cot^2 \alpha}$

- A $\frac{5}{6}$
- B $\frac{5}{2}$
- C $\frac{5}{12}$
- D $\frac{5}{3}$

Answer: A

Question 8

When was the universal immunisation programme started in India ?

A 1974

B 1980

C 1985

D 1991

Answer: C

Question 9

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

Seven friends— A, B, C, D, E, F and G like different colours—red, blue, white, pink, black and yellow, but not necessarily in the same order. They all have different hobbies (like different activities) singing, drawing, reading, cooking, painting, dancing and fishing, but not necessarily in the same order.

The hobby of D is singing. The one whose hobby is cooking likes pink colour. A likes yellow colour. The one whose hobby is fishing likes green colour. The hobby of F is reading. Neither F likes black colour. The one whose hobby is dancing, and drawing does not like black colour. The hobby of A is not drawing. The one whose hobby is drawing does not like red colour. The hobby of G is not drawing. The one whose hobby is drawing does not like white colour; D does not like red colour. The hobby of G is neither painting nor dancing. E does not like green colour. G does not like green and black colour. The hobby of B is not fishing and cooking.

Who among the following likes pink colour?

A C

B G

C B

D E

Answer: B

Explanation:

Name	Color	Hobby
A	yellow	
B		
C		
D		Singing
E		
F		
G		

The hobby of D is singing. The one whose hobby is cooking likes pink colour. A likes yellow.

Name	Color	Hobby
A	yellow	
B		
C		
D		Singing
E		
F	(X Black)	Reading
G		

The one whose hobby is fishing likes green colour.
 The hobby of F is reading. ~~Neither~~ F likes black colour.

Name	Color	Hobby
A	yellow	(X Drawing)
B		
C		
D		Singing
E		
F	(X Black)	Reading
G		(X Drawing)

The hobby of A is not drawing. The one whose hobby is drawing does not like red. The hobby of G is not drawing.

Name	Color	Hobby
A	yellow	(X Drawing)
B		(X fishing, cooking)
C		
D	(X Red)	Singing
E	(X Green)	
F	(X Black)	Reading
G	(X green , black)	(X Drawing, Painting, Dancing)

The one whose hobby is drawing does not like white colour; D does not like red colour. The hobby of G is neither painting nor dancing. E not like green colour. G does not like green and black colour. The hobby of B is not fishing and cooking.

Then , We can say that G either like fishing or cooking.

But G doesn't like green color, so, he must like Pink color and Cooking.

So, B is correct choice.

Question 10

If '+' means '-', '-' means '+', 'x' means '÷' and '÷' means 'x', then $5 - 5 + 5 \div 5 \times 5 = ?$

- A 5
- B 25
- C 20
- D 26

Answer: A

Explanation:

Rearranging it :

$$5+5-5\times 5\div 5$$

$$=5+5-5\times 1$$

$$=5+5-5$$

$$=10-5$$

$$=5.$$

A is correct choice.

Question 11

Mark the true statement:

- i) There are only two primes that are consecutive positive integers.
- ii) For every positive primes, there is a corresponding negative prime.
- iii) Sum of two primes is always even
- iv) Coprime numbers are always prime numbers.

- A Statements (ii) and (iv) only
- B Statement (ii) only
- C Statement (i) only
- D Statement (iii) only

Answer: C

Explanation:

i) There are only two primes that are consecutive positive integers. -- this is true .as 2 & 3 are only two consecutive prime numbers.

But rest of the statements:

- ii) For every positive primes, there is a corresponding negative prime.
- iii) Sum of two primes is always even
- iv) Coprime numbers are always prime numbers.

are false .

C is correct choice.

Question 12

Which element has two shells, both of which are completely filled with electrons?

- A Argon

B Magnesium

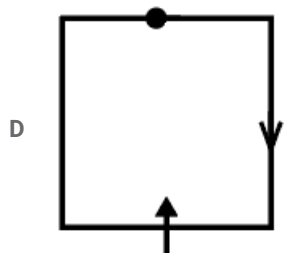
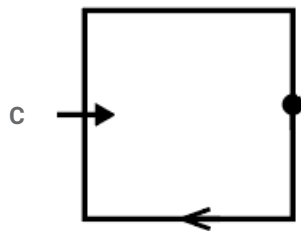
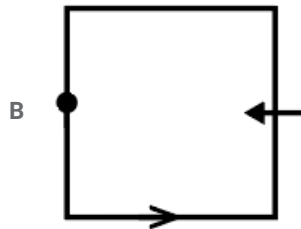
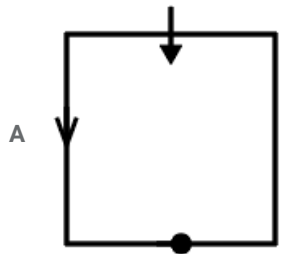
C Carbon

D Neon

Answer: D

Question 13

Find the odd one out from the given options



Answer: A

Explanation:

Starting from image D ,if we rotate image in clockwise direction, then we will get image in D,C and B .

But the position of arrow,dot and line is changed their position in image A ,which is not the part of sequence.

So, A is correct choice.

Question 14

In which of the following states of India is the Shevaroy Hills located?

A Andhra Pradesh

- B Rajasthan
- C Tamil Nadu
- D Karnataka

Answer: C

Question 15

Acid secretion is a characteristic of -

- A Small intestine
- B Stomach
- C Large intestine
- D Buccal cavity

Answer: B

Question 16

Three persons have their ages in the ratio 4 : 7 : 9. Eight years back their total age was 56. How old is the eldest now?

- A 36
- B 42
- C 28
- D 32

Answer: A

Explanation:

Let say, their present age is $4k, 7k$ and $9k$.

So, according to question:

$$(4k-8)+(7k-8)+(9k-8)=56.$$

$$\text{or, } 20k=56+24=80.$$

$$\text{So, } k=4.$$

$$\text{So, present age of eldest is } =9k=9\times 4=36.$$

A is correct choice.

Question 17

If 'Sky' is called 'Sea', 'Sea' is called 'Water', 'Water' is called 'Air', 'Air' is called 'Cloud' and 'Cloud' is called 'River', then what do we drink when thirsty?

- A Water
- B Sea
- C Air
- D Sky

Answer: C

Explanation:

When we thirsty we drink Water .

But here Water is called Air .

So, Air is correct choice.

C is correct answer.

Question 18

Mark the right statement:

- (i) Coprime numbers must be both prime always.
- (ii) Of two coprime numbers one is prime and the other is composite always.
- (iii) Coprime numbers are twin primes.
- (iv) Two consecutive integers are always coprime.

- A Statement (iii) only
- B Statement (iv) only
- C Statement (ii) only
- D only D) Statement (i) only

Answer: B

Explanation:

Let consider two numbers 3 & 8 ,they are coprime to eachother but 8 is not prime number.

So, Statement: (i) Coprime numbers must be both prime always, is not valid.

Let consider two numbers 2 and 3 ,they are coprime to eachother but none of them are composite number.

So, Statement: (ii) Of two coprime numbers one is prime and the other is composite always, is also not valid.

17 & 26 are also coprime to eachother but they are not twin prime.

So, Statement: (iii) Coprime numbers are twin primes, is not valid.

But if we consider any two consecutive numbers ,they are always coprime,as they create even,odd pair for any two number set.

So, Statement (iv) is valid only.

B is correct choice.

Question 19

Fix the symbols +, -, x, ÷ appropriately in the box to fit the equation given here.

$$5 \square 1 \square 3 \square 5 = 20$$

latek

- A -, +, -
- B -, x, x
- C x, x, -
- D ÷, +, x

Answer: D

Explanation:

Rearranging the equation:

$$5 \div 1 + 3 \times 5$$

$$=5 + 3 \times 5$$

$$=5 + 15$$

$$=20.$$

So, D is correct choice.

Question 20

Which celestial body twinkles in the night sky?

- A Moon
- B Mars
- C Jupiter
- D Star

Answer: D

Question 21

With which of these games is the term 'checkmate' associated?

- A Snakes and Ladders
- B Chess
- C Chines Checkers
- D Ludo

Answer: B

Question 22

With which of the following sports is the 'Rohinton Baria Trophy' associa

- A Cricket
- B Football
- C Basketball
- D Hockey

Answer: A

Question 23

The sum of the squared deviations of a set of value is least if measured from _____.

- A Mode
- B Median
- C Arithmetic mean

D Standard deviation

Answer: C

Explanation:

If any negative integer squared it will give you positive integer.

Arithmetic mean is the most close and maximize value of any set .so, if we devariate it from original data set value ,it will give you least value .

So, The sum of the squared deviations of a set of value is least if measured from Arithmetic mean.

C is correct choice.

Question 24

P and Q jog along a circular track of 400 m in opposite directions from the same starting point starting together, with speeds 10 m/s and 40 m/s. Whenever they meet, P's speed is doubled and Q's speed is halved. After what time from start, will they meet for the third time?

A 28 seconds

B 36 seconds

C 18 seconds

D 26 seconds

Answer: D

Explanation:

They run in opposite direction,so their relative velocity is $(40+10)$ m/s =50 m/s.

They will meet for first time after $(400/50)= 8$ sec.

Now, their speed become $(10\times 2)=20$ m/s and $(40/2)=20$ m/s.

So, now their relative velocity become $(20+20)=40$ m/s.

So, they will meet for second time after $(400/40)=10$ sec.

again after meet for third time their speeds will be $(20\times 2)=40$ m/s and $(20/2)= 10$ m/s.

So, relative velocity is= $(40+10)=50$ m/s.

So, they will meet for third time after $(400/50)=8$ m/s.

So, total time taken to meet for third time is $=(8+10+8)=26$ sec.

D is correct choice.

Question 25

Find the least number which when doubled will be exactly divisible by 12, 16, 18, 21 and 28.

A 336

B 19940

C 1008

D 504

Answer: D

Explanation:

$$12 = 2^2 \times 3$$

$$16 = 2^4$$

$$18 = 3^2 \times 2$$

$$21 = 3 \times 7$$

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

$$\text{So, LCM}(12,16,18,21,28)=(2^4 \times 3^2 \times 7)$$

$$=1008.$$

So, A number is exactly divisible by 12,16,18,21 and 28 ,if it is in the form of $(1008k)$,where k is an integer.

So, by choices we can say that the number could be 1008 where $k=1$.

we can get 1008 by doubling up 504 .

D is correct choice.

Question 26

If the length of a wire is doubled by taking more of wire, what happens to its resistance?

- A Gets decreased
- B Gets halved
- C Gets doubled
- D Remains unaffected

Answer: C

Question 27

A cistern can be filled in 9 hours. But due to a leak, it takes one hour more. If the cistern is full,in what time will it become empty due to the leak?

- A 60 hours
- B 30 hours
- C 90 hours
- D 75 hours

Answer: C

Explanation:

Let say, in x hours that leak emptied the tank.

So, According to question:

$$(1/9)-(1/x)=(1/10)$$

$$\text{or, } (1/x)=(1/9)-(1/10)=(10-9)/90.$$

$$\text{or, } 1/x=1/90.$$

$$\text{or, } x=90.$$

C is correct choice.

Question 28

Two articles cost Rs.2500 each. One is sold at 5% profit. On the whole if there is 20% profit,what is the percentage profit on selling the other article?

- A 20%

- B 30%
- C 25%
- D 35%

Answer: D

Question 29

What is the normal temperature of a human body?

- A 94.8°F
- B 98.6°F
- C 96.7°F
- D 100°F

Answer: B

Question 30

The optician prescribes a corrective lens of power +2.5D. What does this mean?

- A The lens is a combo of 2 convex lenses, with powers 2D and 0.5D
- B The lens is a combo of 2 concave lenses, with powers 2D and 0.5 D
- C The lens is convex with power 2D
- D The lens is concave with power 2.5D

Answer: A

Question 31

Five years ago, the average age of a couple was 24. At present, the average of the couple and a child is 20. What is the child's age?

- A 1 years
- B 2 years
- C 4 years
- D 3 years

Answer: B

Explanation:

Let say , individual ages of couple and child are a,b and c respectively.

$$(a-5)/2 + (b-5)/2 =24$$

$$\text{or, } (a+b)=58.....(1)$$

At present, total age of them=60.

$$\text{So, } a+b+c=60$$

or, $c=60-58=2$.

B is correct choice.

Question 32

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

Statements:

1) Some towns are cities.

2) All cities are homes.

Conclusions:

I. Some towns are homes.

II. Some homes are cities.

A Neither conclusion I nor II follows

B Both conclusions I and II follow

C Only conclusion II follows

D Only conclusion I follows

Answer: B

Explanation:

Statements:

1) Some towns are cities.

2) All cities are homes.

Means that

Some towns are homes and Some homes are cities also .

So, both the conclusions are right.

B is correct choice.

Question 33

Who was invited by Lord Wavell to form the interim Government in India in 1946?

A Rajendra Prasad

B Vallabhbhai Patel

C C. Rajagopalachari

D Jawaharlal Nehru

Answer: D

Question 34

Two squares differ in areas by 32 cm^2 . If the difference in their sides is 4 cm, what are the sides of the two squares?

A 4 cm, 2 cm

B 12 cm, 8 cm

C 6 cm, 2 cm

D 4 cm, 4 cm

Answer: C

Explanation:

Let say, their sides are a and b.

$$\text{So, } a^2 - b^2 = 32$$

$$\text{and } a - b = 4 \dots \dots (1)$$

$$\text{So, } (a + b)(a - b) = 32.$$

$$\text{or, } (a+b) = 8 \dots \dots (2)$$

By solving (1) and (2) we get :

$$a = 6 \text{ and } b = 2.$$

C is correct choice.

Question 35

Graafian follicles are characteristically found in the -

- A Testis of mammals
- B Ovary of frog
- C Thyroid of mammals
- D Ovary of mammals

Answer: D

Question 36

Compare static friction and sliding friction.

- A Sliding friction is slightly smaller than the static friction
- B Sliding friction is slightly greater than the static friction
- C Sliding friction is equal to the static friction
- D Sliding friction is abnormally greater than the static friction

Answer: A

Question 37

Find the missing group of alphabets in the following series. ABC, EFG, IJK, (...), UVW

- A QPO
- B RST
- C XYZ
- D OPQ

Answer: D

Explanation:

Consecutive three letters of English alphabets are taken together to make a group. Then one letter gap for each group has been

considered.

So, required set is OPQ.

D is correct choice.

Question 38

Two boys A and B start from the opposite direction of 14 km apart. A is facing east and B is facing west. A reaches the distance of 5 km towards east and B reaches a distance of 2 km towards west. What is the distance between the two boys?

A 9 km

B 5 Km

C 7 Km

D 11 Km

Answer: C

Explanation:

A and B are apart of 14 km from each other in opposite direction.

if A move 5 km east and B move 2 km west, then they will come close by $(5+2)=7$ km.

So, they will be apart of $14-7=7$ km.

C is correct choice.

Question 39

The ratio of salaries of P and Q last year is 4 : 5. The ratio of last year salary and the present salary of P is 3: 5 and for Q this ratio is 2 : 3. If their total salary at present is Rs. 6800, what is salary of Q ?

A Rs.2700

B Rs.3600

C Rs.4200

D Rs.3200

Answer: B

Explanation:

Let say, last year P and Q's salary was 4k and 5k.

Now,

$$(4k/P \text{ present salary}) = 3/5$$

$$\text{or, } P \text{ present salary} = 20k/3.$$

Similarly,

$$Q \text{ present salary} = 15k/2.$$

Now,

$$(20k/3) + (15k/2) = 6800.$$

$$\text{or, } 40k + 45k = 6 \times 6800$$

$$\text{or, } k = (6 \times 6800) / 85 = 480.$$

$$Q's \text{ present salary} = 480 \times (15/2) = 3600 \text{ Rs.}$$

B is correct choice.

Question 40

If $x^4 + \frac{1}{x^4} = 47$, then find the value of $x + \frac{1}{x}$

- A 5
- B 7
- C 9
- D 3

Answer: D

Explanation:

$$x^4 + \frac{1}{x^4} = 47$$

$$\text{or, } (x^2 + \frac{1}{x^2})^2 - 2 \cdot x^2 \cdot \frac{1}{x^2} = 47.$$

$$\text{or, } (x^2 + \frac{1}{x^2})^2 = 49 = 7^2.$$

$$\text{or, } (x^2 + \frac{1}{x^2}) = 7.$$

$$\text{or, } (x + \frac{1}{x})^2 - 2 \cdot x \cdot \frac{1}{x} = 7.$$

$$\text{or, } (x + \frac{1}{x})^2 = 9 = 3^2.$$

$$\text{or, } (x + \frac{1}{x}) = 3.$$

D is correct choice.

Question 41

Which of the following indicators can be used by visually impaired student?

- A Turmeric
- B Petunia leaves
- C Litmus
- D Vanilla

Answer: D

Question 42

Who among the following took charge as the MD and CEO of ICICI Securities with effect from May 7, 2019?

- A Uday Chitale
- B Radhakrishnan Na
- C Vijay Chandok
- D Girish Chandra chaturvedhi

Answer: C

Question 43

Which of the following devices fitted in vehicles controls the air pollution?

- A Catalytic converter
- B Carburetor
- C Inverter
- D Radiator

Answer: A

Question 44

Who among the following released the book 'Sabka Saath Sabka Vikas' in March 2019?

- A Sushma Swaraj
- B Arun Jaitley
- C Rajnath Singh
- D Ravi Shankar Prasad

Answer: B

Question 45

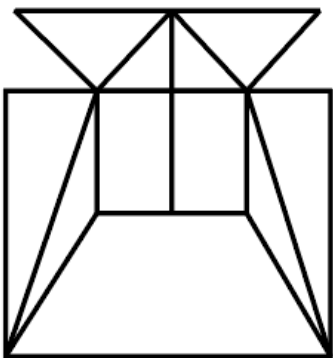
ASTRO-H was an X-ray astronomy satellite launched by?

- A Australia
- B USA
- C Japan
- D India

Answer: C

Question 46

How many lines are there given figure



- A 8
- B 12
- C 17

D 21

Answer: C

Question 47

The breadth of a rectangular field is 60% of its length. If the perimeter of the field is 800 m, what is the area of the field?

A 40000 m²

B 37500 m²

C 18750 m²

D 48000 m²

Answer: B

Explanation:

Length = l.

So, breadth=0.60l.

So, $2(l+0.60l)=800$

or, $1.6l=400$

or, $l=250$.

So, breadth= 150 m.

So, area of the fence= $250 \times 150m^2$

= $37500m^2$.

B is correct choice.

Question 48

Two pipes P and Q can fill a tank in 32 minutes and 48 minutes. Both pipes are opened and after some time pipe Q is turned off. The tank is filled in 24 minutes. When was the pipe Q closed?

A 15 minutes

B 10 minutes

C 16 minutes

D 12 minutes

Answer: D

Explanation:

Let say, after x min Pipe Q turned off.

P and Q together can fill in 1 min =

$(1/32)+(1/48)=(3+2)/96=5/96$.

So, in x min they will fill = $5x/96$ part.

But, (24-x) min ,P can fill = $(24-x)/32$.

So, $(5x/96)+(24-x)/32=1$.

or, $(5x+72-3x)/96=1$.

or, $2x+72=96$.

or, $x=12$.

So, D is correct choice.

Question 49

Which of the following is the biggest stadium in India?

- A Salt Lake Stadium
- B Kalinga Stadium
- C Chinnaswamy Stadium
- D Sardar Patel Stadium

Answer: A

Question 50

What is the outer ear called?

- A Pinna
- B Auditory nerve
- C Ear drum
- D Cochlea

Answer: A

Question 51

P and Q can do a piece of work in 40 days. Q and R can do it in 120 days. Q alone could finish it in 180 days. In how many days will P and R working together finish the work?

- A 25
- B 50
- C 45
- D 35

Answer: C

Explanation:

Let P, Q & R take a, b & c days to complete the work individually.

Given, p & Q can do piece of work in 40 days.

$$\Rightarrow \frac{1}{a} + \frac{1}{b} = \frac{1}{40}$$

Given, Q & R can do it in 120 days.

$$\Rightarrow \frac{1}{b} + \frac{1}{c} = \frac{1}{120}$$

Given, b = 180 days

$$\Rightarrow \frac{1}{c} = \frac{1}{120} - \frac{1}{180}$$

$$\Rightarrow \frac{1}{a} = \frac{1}{40} - \frac{1}{180}$$

The work done by P & R in one day = $\frac{1}{a} + \frac{1}{c}$

$$= (1/40 - 1/180) + (1/120 - 1/180)$$

$$= 1/40 + 1/120 - 1/90$$

$$= (9+3-4)/360$$

$$= 8/360$$

$$= 1/45$$

=> The number of days P & R will take to do the piece of work together is 45 days.

C is correct choice.

Question 52

From the given options, find the ODD one out.

A LO

B TW

C PV

D EH

Answer: C

Explanation:

$$L + 3 = O, E + 3 = H, T + 3 = W.$$

$$\text{But, } P + 6 = V.$$

C is correct choice.

Question 53

Complete the series.

ab, ba, abc, cba, abcd, (...)

A dcba

B bacd

C cabd

D acbd

Answer: A

Explanation:

It's a palindrome sequence each two consecutive words.

$$\text{So, } abcd = dcba.$$

A is correct choice.

Question 54

A train takes 2 hours less for a journey of 300 km by increasing its speed by 5 km/h. What is its normal speed?

A 25 km/h

B 20 km/h

C 35 km/h

D 30 km/h

Answer: A

Explanation:

Time= distance/speed

let unusual speed be x

so $(300/x)-(300/x+5)=2$

$300\{(x+5)-x\}=2(x+5)x$

$1500=2x(x+5)$

$x(x+5)=750$

$(x^2)+5x-750=0$

from this equation, we can find the two zeroes for the equation as -30 and 25

as speed can never be negative,

so $x=25$ kmph

A is correct choice.

Question 55

Which number will best complete the relationship given below? 21 : 36 :: 13 : ?

A 20

B 23

C 24

D 22

Answer: A

Explanation:

$21 : 36 \Rightarrow 21 \times 2 - 6 = 36.$

Similarly, $13 : 20 \Rightarrow 13 \times 2 - 6 = 20.$

A is correct choice.

Question 56

Plants respire through?

A Stem

B Stomato

C Flower

D Fruits

Answer: B

Question 57

Which of these is a perfect square?

- A 9801
- B 9016
- C 9013
- D 9887

Answer: A

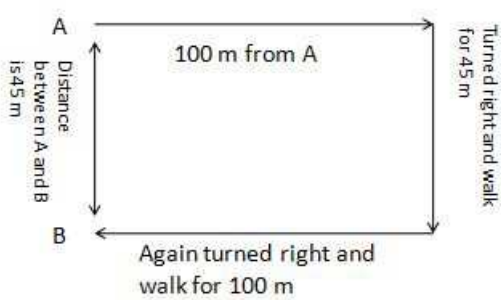
Question 58

Anitha walked 100 m from point A and turned right to cover 45 m. Again she turned right and walked 100 m to reach point B. What is the distance between the point A and B?

- A 50 m
- B 100 m
- C 35 m
- D 45 m

Answer: D

Explanation:



D is correct choice.

Question 59

"Phulkari" is a famous embroidery of which state of India?

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

Answer: A

Question 60

The difference between Simple Interest and Compound Interest for 2 years on a certain sum at the rate of 4% per annum is Rs.8. Find the sum.

- A Rs.4000

B Rs.10000

C Rs.8000

D Rs.5000

Answer: D

Question 61

Bleeding gums is associated with?

A Rickets

B Scurvy

C Kwashiorkor

D Astigmatism

Answer: D

Question 62

Simplify: 4.54×0.99

A 4.5

B 4.04946

C 4.4946

D 44.946

Answer: C

Explanation:

$$4.54 \times 0.99$$

$$= 4.54 \times (1 - 0.01)$$

$$= 4.54 - 0.0454$$

$$= 4.4946.$$

C is correct choice.

Question 63

What is formed when ethanol reacts with ethanoic acid on warming in the presence of a few drops of concentrated sulphuric acid?

A Sodium ethoxide

B Ester

C Ethene

D Ethane

Answer: B

Question 64

If in a certain code, 'il be pee' means 'roses are blue', 'sik hee' means 'red flowers' and 'pee mit hee' means 'flowers are vegetables', then which of the following means 'roses' in that code?

- A Cannot be determined
- B sik
- C il
- D be

Answer: A

Explanation:

(1) 'il be pee' means 'roses are blue'.

(2) 'sik hee' means 'red flowers'.

(3) 'pee mit hee' means 'flowers are vegetables'.

From (2) and (3), we get :

hee= flowers and sik= red.

So, We can't infer that what is the code for 'are'.

Therefore we are not able to find the code for 'roses' and 'blue' and 'vegetables'.

So, A is correct choice.

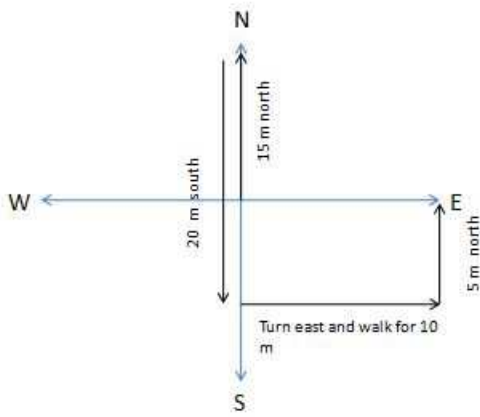
Question 65

Ravi starts walking towards north. After walking 15 m, he turns towards south . After walking 20m, he turns towards east and walks 10 m. He then turns towards north and walks 5 m. How far and in which direction is he from his starting point?

- A 10 m, north
- B 10 m, west
- C 10 m, east
- D 10 m, south

Answer: C

Explanation:



Finally he is at eastward from starting point.

C is correct choice.

Question 66

How do bats navigate and locate its food in dark?

- A They send high pitched ultrasonic squeaks which reflect on hitting any obstacle
- B They send and track some infrasonic signals
- C They give some peculiar sound for tracking
- D They use their eyes

Answer: A

Question 67

If each side of a cube becomes three times of itself, then its volume _____ of its original volume.

- A Becomes 9 times
- B Becomes 27 times
- C Becomes 3 times
- D Becomes 2 times

Answer: B

Explanation:

$$\text{Volume of Sphere} = (\text{Side})^3.$$

If its side become 3 times, then its volume would be = $(3\text{Side}^3) = 27\text{Side}^3$.

B is correct choice.

Question 68

Bacteria that can grow and produce lethal toxins even inside the refrigerator are -

- A Salmonellae

- B Streptococcus Faecalis
- C Clostridium Botulinum
- D Escherichia Coli

Answer: C

Question 69

If consumption of sugar increases from 12 kg to 15 kg, then what is the percentage increase?

- A 39.2%
- B 25%
- C 20%
- D 33.3%

Answer: B

Explanation:

$$\text{Percentage increase} = \frac{15-12}{12} \times 100 = 25\%$$

B is correct choice.

Question 70

What Simple Interest is earned on a sum of Rs. 5700 at 12% rate in 1.5 years?

- A Rs.1400
- B Rs.1070
- C Rs.1026
- D Rs.1820

Answer: C

Explanation:

$$S.I = 5700 \times 0.12 \times 1.5 = 1026 \text{ Rs.}$$

C is correct choice.

Question 71

Which of the following High Courts has the largest jurisdiction in the country?

- A Allahabad High Court
- B Bombay High Court
- C Gauhati High Court
- D Calcutta High Court

Answer: C

Question 72

Equivalent resistance of resistances connected in series is the _____ of individual resistances.

- A Sum of squares
- B Sum
- C Product
- D Difference

Answer: B

Question 73

Although metals form basic oxides, which of the following metals form an amphoteric oxide?

- A Na
- B Cu
- C Al
- D Ca

Answer: C

Question 74

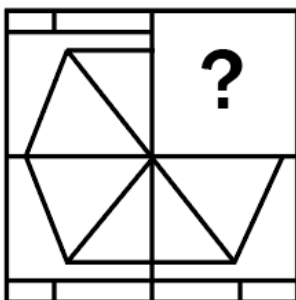
Which of the following elements is NOT part of proteins?

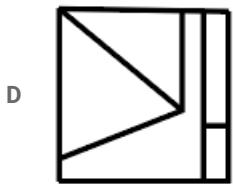
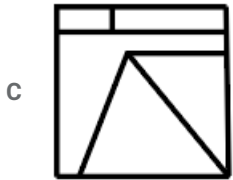
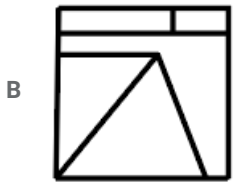
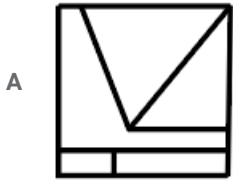
- A Iodine
- B Sulphur
- C Carbon
- D Nitrogen

Answer: A

Question 75

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





Answer: B

Question 76

The sum of LCM and HCF of two numbers is 372, If LCM is equal to 92 times of HCF and one the numbers is 368, what is the other number?

- A 4
- B 360
- C 92
- D 96

Answer: A

Explanation:

$$LCM + HCF = 372.$$

$$LCM = 92HCF.$$

$$\text{So, } 93HCF = 372.$$

$$\text{OR, } HCF = 4.$$

$$\text{So, } LCM = 368.$$

$$\text{So, Another Number} = \frac{LCM \times HCF}{1st\ number} = \frac{368 \times 4}{368} = 4.$$

A is correct choice.

Question 77

The increase in oil production is due to?

- A Brown Revolution
- B Green Revolution
- C White Revolution
- D Yellow Revolution

Answer: D

Question 78

What are the two most common materials used to make wires for electricity transmission?

- A Tungsten and manganin
- B Copper and aluminium
- C Manganin and constantan
- D Nichrome and constantan

Answer: B

Question 79

Find the wrong number in the given series. 18, 24, 36, 60, 110, 204

- A 110
- B 24
- C 18
- D 204

Answer: A

Explanation:

Rather than 110, each number in the series is divisible by 3.

So, A is correct choice.

Question 80

Arsenious sulphide sol is an example of?

- A Colloids
- B Solids
- C Suspension
- D Solution

Answer: A

Question 81

Which of the following issues create(s) threat to the public health?

- A Pollution, water scarcity and overpopulation
- B Overpopulation
- C Water scarcity
- D Pollution

Answer: A

Question 82

Choose the pair which shows the same relationship as in pair given below.

ABD : EGH

- A GHJ : KLN
- B OPR : UTY
- C IJL : MOP
- D IKL : NRT

Answer: C

Explanation:

ABD : EGH implies that ,

$$A + 1 = B, B + 2 = D : E + 2 = G, G + 1 = H.$$

Similarly, IJL : MOP ($I + 1 = J, J + 2 = L : M + 2 = O, O + 1 = P.$)

So, C is correct choice.

Question 83

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

Statements:

- 1) All dogs are bats.
- 2) All bats are cats.

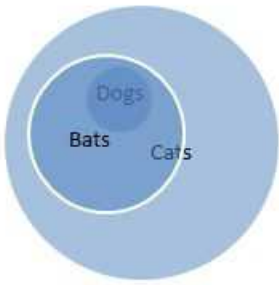
Conclusions:

- I. Some dogs are not cats.
- II. Some cats are dogs.

- 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: A

Explanation:



So , Some cats are Dogs : - is true.

A is correct choice.

Question 84

Chemically, rust is?

- A Ferric chloride
- B Hydrated ferric oxide
- C Ferric bromide
- D Ferric sulphide

Answer: B

Question 85

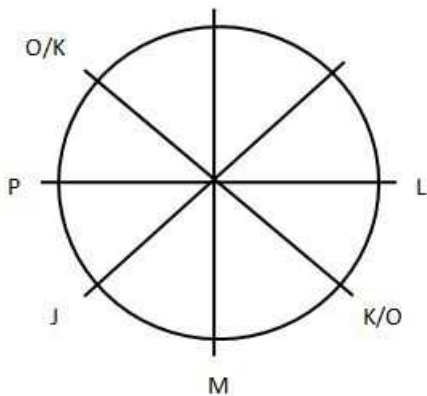
Read the following information carefully and answer the question given below.

Seven managers— J, K, L, M, N, O and P are sitting along a circle facing the centre. J is between P and . L is second to the right of M and is between K and O. K is not the neighbour of N. Which of the following is CORRECT?

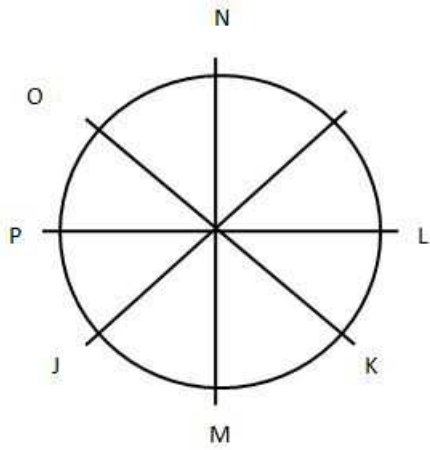
- A J is to the immediate left of M
- B M is second to the left of P
- C P is between J and M
- D L is third to the left of J

Answer: A

Explanation:



J is between P and M . L is second to the right of M and is between K and O.



K is not the neighbour of N.

So, A is correct choice.

Question 86

Which of the following will best complete the relationship given below? $AFI : M :: ABA : ?$

- A O
- B K
- C J
- D L

Answer: B

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	

$AFI : M$ means :

$$\sqrt{AFI} = \sqrt{169} = 13 = M.$$

Similarly, $\sqrt{ABA} = \sqrt{121} = 11 = K.$

So, B is correct choice.

Question 87

Ravi sold two bicycles at the same price, but gained 20% on one and on the other bicycle lost 20%. Find his profit or loss in the transaction involved.

- A Loss of 20%
- B Loss of 4%

- C Gain of 10%
- D Gain of 20%

Answer: B

Explanation:

If we gain same as loss by selling an item ,then we incur a loss.

Here loss percentage is = $\left(\frac{20}{100} \times \frac{20}{100}\right) = 0.04 \text{ loss.}$

B is correct choice.

Question 88

Simplify: $1/(\sec \theta - \tan \theta)$

- A $(\sec \theta + \tan \theta)$
- B $(\operatorname{cosec} \theta - \cot \theta)$
- C $(\cos \theta + \sin \theta)$
- D $(\sec^2 \theta - \tan^2 \theta)$

Answer: A

Explanation:

$$\frac{1}{\sec \theta - \tan \theta} = \frac{\sec \theta + \tan \theta}{\sec^2 \theta - \tan^2 \theta} = (\sec \theta + \tan \theta).$$

(we know $\sec^2 \theta - \tan^2 \theta = 1$)

A is correct choice.

Question 89

NASA spacecraft LADEE confirmed the presence of _____ gas in Moon's atmosphere.

- A Xenon
- B Radon
- C Krypton
- D Neon

Answer: D

Question 90

Electron revolves around nucleus in orbits which have?

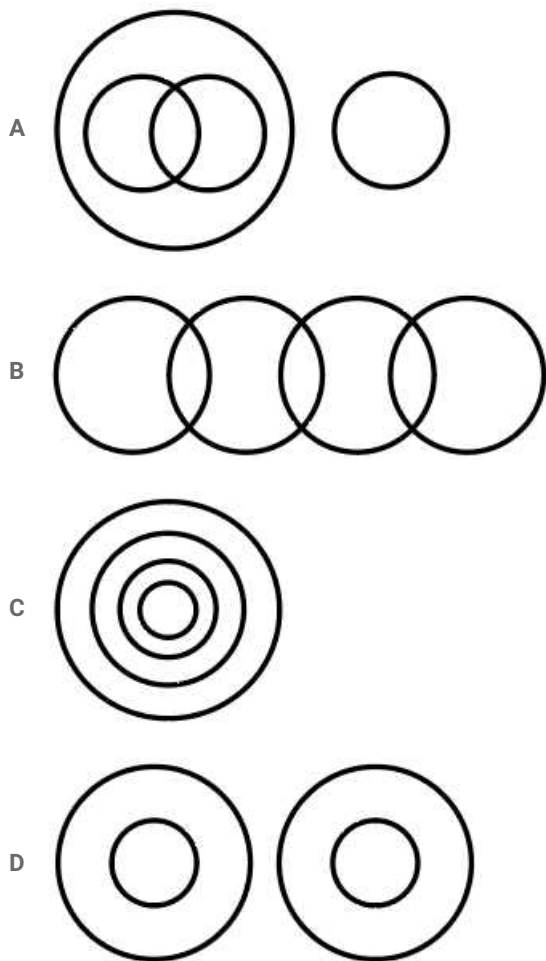
- A Variable energy
- B Infinite energy
- C No energy
- D Fixed energy

Answer: D

Question 91

choose the figure that best represents the relationship among the classes given below

State, Continent, District, Country



Answer: C

Explanation:

State is made of District, Country is made of State, Continent is made of Country.

So, C is correct choice.

Question 92

If $x = \frac{\sqrt{3}+1}{\sqrt{3}-1}$ $y = \frac{\sqrt{3}-1}{\sqrt{3}+1}$ then find the value of $x^2 + y^2$

A 14

B 3

C 13

D 0

E

Answer: A

Explanation:

$$x = \frac{\sqrt{3}+1}{\sqrt{3}-1} = \frac{(\sqrt{3}+1)^2}{3-1} = \frac{1}{2} (3 + 2\sqrt{3} + 1) = (2 + \sqrt{3}).$$

$$\text{Similarly, } y = \frac{\sqrt{3}-1}{\sqrt{3}+1} = (2 - \sqrt{3}).$$

$$\text{So, } x^2 = (2 + \sqrt{3})^2 = 4 + 3 + 4\sqrt{3} = (7 + 4\sqrt{3}).$$

$$\text{And, } y^2 = (2 - \sqrt{3})^2 = 4 + 3 - 4\sqrt{3} = (7 - 4\sqrt{3}).$$

$$\text{So, } x^2 + y^2 = 7 + 4\sqrt{3} + 7 - 4\sqrt{3} = 14.$$

A is correct choice.

Question 93

Product of two proper fractions is __

- A Always greater than either of the fractions
- B Always less than either of the fractions
- C Sometimes greater and sometimes less than either fraction
- D Greater than the product of their reciprocals

Answer: B

Question 94

Which leader said 'Swarajya is my birthright and I shall have it'?

- A Jawaharlal Nehru
- B Bal Gangadhar Tilak
- C Motilal Nehru
- D Bipin Chandra Pal

Answer: B

Question 95

Which of the following is the longest river in the Peninsular region of India?

- A Narmada
- B Godavari
- C Mahanadi
- D Cauvery

Answer: B

Question 96

Find the ODD one out from the given options.

- A Library

B Mathematics

C Chemistry

D Physics

Answer: A

Explanation:

Mathematics, Physics and Chemistry are subjects which are used to study in Library.

A is correct choice.

Question 97

Find the greatest among these fractions. $\frac{5}{6}$, $\frac{6}{11}$, $\frac{2}{3}$, $\frac{8}{9}$, $\frac{6}{7}$

A $\frac{2}{3}$

B $\frac{5}{6}$

C $\frac{8}{9}$

D $\frac{6}{7}$

Answer: C

Question 98

One Pascal (Pa) equals which of the following?

A Newton metre squared $N\ m^2$

B Newton per metre N / m

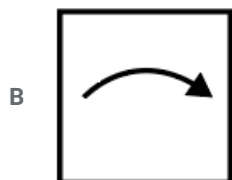
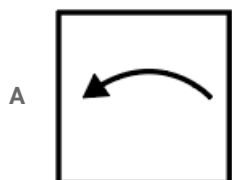
C Newton per metre squared N / m^2

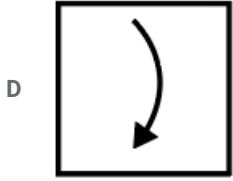
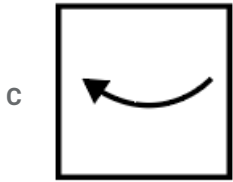
D Newton metre $N\ m$

Answer: C

Question 99

Find the ODD one out from the given options





Answer: A

Explanation:

Image in option A is rotated in anti-clockwise direction.

So, A is correct choice.

Question 100

Natrium is the Latin name of _____.

- A Sulphur
- B Neon
- C Nitrogen
- D Sodium

Answer: D