

RRB JE
28th May 2019
Shift-1

Instructions

For the following questions answer them individually

Question 1

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

Seven executives— T, U, V, W, X, Y and Z are sitting along a circle facing the centre. T is between Z and W. V is second to the right of W and is between U and Y. U is not the neighbour of X.

Who sits to the immediate right of U ?

A V

B Y

C X

D W

Answer: A

Question 2

The moon revolves around which celestial body?

A Comet

B Meteor

C Earth

D Star

Answer: C

Question 3

Who among the following won gold medal at Makran Cup boxing in Iran, 2019?

A Duryodhan Singh Negi

B Lalitha Prasad

C Manish Kaushik

D Deepak Singh

Answer: D

Question 4

Which of the following cities is nicknamed as 'City of Joy' in India?

A Kolkata

B Shimla

C Chennai

D Mumbai

Answer: A

Question 5

Profit percentage earned by selling an article for Rs.1920 is equal to the loss percentage when the article is sold for Rs.1280. At what price should it be sold, if the profit is to be 30%?

A Rs.2000

B Rs.2060

C Rs.2040

D Rs.2080

Answer: D

Question 6

What is the force required to keep the object sliding on a surface with the same speed?

A Static friction

B Rolling friction

C Contact friction

D Sliding friction

Answer: D

Question 7

Which hormone protects the blood glucose from going too low?

A Glucagon

B Vasopressin

C Oxytocin

D Insulin

Answer: A

Question 8

Rs.16500 is split into two fixed deposits for 2 years at 10% and 12% Simple Interest. If the total interest received from the deposits is Rs.3620, how much was invested in the 12% scheme ?

A Rs.10500

B Rs.10000

C Rs.8500

D Rs.8000

Answer: D

Question 9

With which of the following sports is Manpreet Singh associated ?

A Badminton

B Tennis

C Hockey

D Football

Answer: C

Question 10

The radius of a circle increases by 5%. What is the percentage increase in its area?

A 21.5%

B 10.25%

C 10.5%

D 25%

Answer: B

Question 11

Which of the following is the most abundant source of iron ?

A Green vegetables

B Milk

C Eggs

D Beans

Answer: A

Question 12

In a certain code, 'CORNER' is written as 'GSRVIV'. How can 'CENTRAL' be written in that code?

A GIRYVEP

B GIRXEVP

C GIRXVPE

D GIRXVEP

Answer: D

Question 13

When was the first battle of Panipat fought?

- A 1761
- B 1661
- C 1556
- D 1526

Answer: D

Question 14

Find the area of the card board that is required to make a box of size $10\text{ cm} \times 8\text{ cm} \times 4\text{ cm}$.

- A 412 cm^2
- B 388 cm^2
- C 304 cm^2
- D 488 cm^2

Answer: C

Question 15

E-shakti, a project on digitisation of self-help groups, was launched by-

- A SEBI
- B NABARD
- C IMF
- D RBI

Answer: B

Question 16

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

Statements:

- 1) Some bags are chocolates.
- 2) Some cakes are chocolates.

Conclusions:

- I. All cakes being bags is a possibility.
- II. Some bags are cakes.

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

Answer: B

Question 17

Find the wrong number in the given series.

246, 232, 220, 204, 190

A 190

B 220

C 204

D 246

Answer: B

Question 18

Simplify: $6 \div [2(1 + 2)]$

A 3

B 9

C 1

D 2

Answer: C

Question 19

If 54321A is divisible by 9, then find the value of 'A'.

A 0

B 2

C 4

D 3

Answer: D

Question 20

Ages of father and son add up to 50. Six years back father's age was 6 more than thrice his son's age. What will be father's age 6 years hence?

A 42 years

B 50 years

C 48 years

D 40 years

Answer: A

Question 21

An atom has a mass number of 23 and atomic number 11. The number of protons is-

A 23

B 22

C 12

D 11

Answer: D

Question 22

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

Statements:

1) Some books are cars.

2) Some cars are boxes.

Conclusions:

I. Some books are boxes.

II. All boxes are cars.

A Only conclusion II follows

B Both conclusions I and II follow

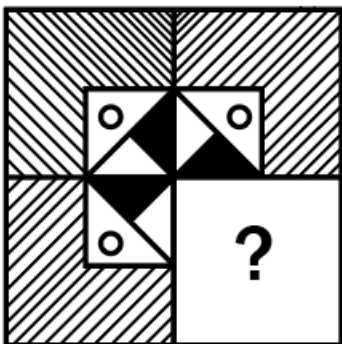
C Only conclusion I follows

D Neither conclusion I nor II follows

Answer: D

Question 23

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





Answer: C

Question 24

How much work is done when one Coulomb charge moves against a potential difference of 1 Volt?

- A 1 Ampere
- B 1 Joule
- C 1 Watt
- D 1 Coulomb

Answer: B

Question 25

115% is equal to which of these fractions ?

- A $\frac{23}{20}$
- B $\frac{3}{20}$
- C $\frac{20}{23}$
- D $\frac{20}{3}$

Answer: A

Question 26

Simple epithelium is-

- A All of the options
- B Two to three cell thick

C Two cell thick

D One cell thick

Answer: D

Question 27

Which of the following is an alloy of copper and zinc?

A Alnico

B Brass

C Solder

D Bronze

Answer: B

Question 28

What is the normal pulse rate of humans?

A 2 beats per second

B 97 beats per minute

C 70-80 beats per minute

D 80-90 beats per minute

Answer: C

Question 29

What is the primary standard level for carbon monoxide for assuring air quality?

A 9 ppm

B 10 ppm

C 1 ppm

D 90 ppm

Answer: A

Question 30

Who among the following discovered an Earth-sized planet, HD 21749b using Transiting Exoplanet Survey Satellite in 2019?

A NASA

B ISRO

C ACAE

D APSCO

Answer: A

Question 31

Perfect square numbers ending with '1' will have their square roots ending in

- A 1 or 9
- B 9 only
- C 3
- D 1 only

Answer: A

Question 32

The variance of 5 values is 16. If each value is doubled, find the standard deviation of the new value.

- A 4
- B 8
- C 16
- D 10

Answer: B

Question 33

Leukoderma is a disease of the

- A Eyes
- B Skin
- C Throat
- D Liver

Answer: B

Question 34

Find the ODD one out from the given options.

- A X
- B S
- C V
- D T

Answer: B

Question 35

A motorcyclist covers a distance of 192 km at a speed of 32 km/h. A car starts from the same place as the motorcyclist 2.5 hours later, but covers the same distance 0.5 hour earlier. What is the ratio of the speed of the car and the motorcycle?

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

Answer: B

Question 36

In a certain code, 'gri chri' means 'brand new', 'gyp twoh' means 'very old', 'gri bur twoh' means 'old and new' and 'chri deh twoh' means 'old brand car'. Which of the following codes denotes 'new car'?

- A twoh deh
- B chri gri
- C gri deh
- D deh gyp

Answer: C

Question 37

What is the concept of spherical lenses?

- A Scattering of light
- B Light refraction
- C Radiation of light
- D Light reflection

Answer: B

Question 38

Find the ODD one out from the given options.

- A BD
- B EG
- C MN
- D CE

Answer: C

Question 39

What is the nature of the commonly used tooth paste ?

- A Neutral
- B All of the options
- C Acidic
- D Basic

Answer: D

Question 40

Which political leader was popularity known as 'Chacha?'

- A Subhas Chandra Bose
- B Mahatma Gandhi
- C Jawaharlal Nehru
- D Bal Gangadhar Tilak

Answer: C

Question 41

Which of the following is the hardest substance known?

- A Buckminsterfullerene
- B Diamond
- C Graphite
- D Iron

Answer: B

Question 42

Simplify: $\left[1 + 10^{\frac{1}{10}}\right] + \left[1 - 10^{\frac{1}{10}}\right]$

- A 2
- B $\frac{3}{10}$
- C $\frac{91}{101}$
- D $\frac{101}{10}$

Answer: A

Question 43

Pellagra is caused through the deficiency of-

- A Niacin
- B Riboflavin
- C Ascorbic acid
- D Folic acid

Answer: A

Question 44

Find the missing number in the following series.

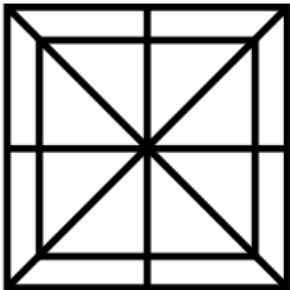
0, 7, 26, 63, 124, (...), 342

- A 214
- B 216
- C 213
- D 215

Answer: D

Question 45

How many triangles are there in the given figure ?



- A 27
- B 29
- C 32
- D 25

Answer: C

Question 46

What is the important use of coke ?

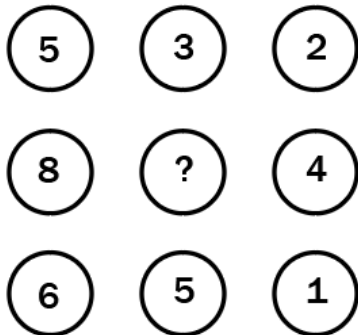
- A As an oxidising agent
- B As a reducing agent in the extraction of metals

- C As a fuel for industrial boilers
- D As a fuel in domestic ovens

Answer: B

Question 47

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



- A 5
- B 3
- C 4
- D 6

Answer: C

Question 48

How many electrons are there in one Coloumb of charge?

- A 0.625×10^3 electrons
- B 6.25×10^{18} electrons
- C 62.5×10^{13} electrons
- D 625×10^{23} electrons

Answer: B

Question 49

Which of the following will best complete the relationship given below ?
BFIJ : DHKL :: LOQT : ?

- A NQSV
- B NSQV
- C NQVS
- D NVSQ

Answer: A

Question 50

Which of the following defence satellites of India was launched in 2019?

- A GSAT-6A
- B IRNSS-1I
- C RESOURCESAT-2A
- D EMISAT

Answer: D

Question 51

If $(10.24 \times 10.24) - (10.24 \times A) + (0.24 \times 0.24)$ is a perfect square, then find the value of 'A'.

- A 0.12
- B 0.24
- C 0.36
- D 0.48

Answer: D

Question 52

In how many years will a certain sum of money double itself at 5% Simple Interest ?

- A 22
- B 20
- C 18
- D 15

Answer: B

Question 53

Ravi travelled 4 km straight towards south. He then turned left and travelled 6 km straight; he again turned right and travelled 4 km straight. How far is he from the starting point?

- A 8 km
- B 12 km
- C 18 km
- D 10 km

Answer: D

Question 54

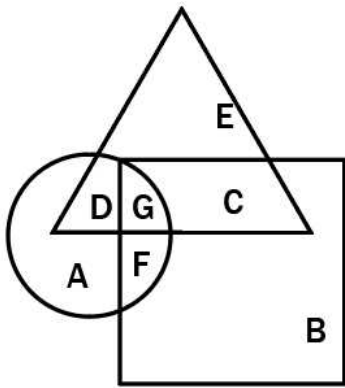
The sum of the digits of a two-digit number is 15 and the difference between the digits is 3. What is the two-digit number?

- A 78
- B 128
- C 96
- D 69

Answer: C

Question 55

In the given figure, the circle represents graduate, triangle represents working people, and square represents post graduate. Which region represents graduate and post graduate but not working people?



- A G
- B D
- C F
- D C

Answer: C

Question 56

Which of the following is known as 'Dry ice'?

- A Carbon monoxide
- B Liquid carbon dioxide
- C Gaseous carbon dioxide
- D Solid carbon dioxide

Answer: D

Question 57

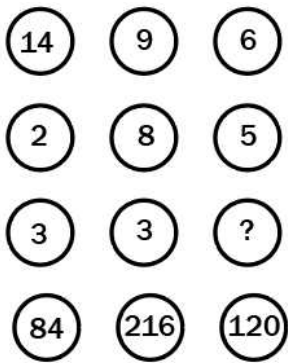
With which game is Bhagyashree Thipsay associated?

- A Swimming
- B Badminton
- C Chess
- D Football

Answer: C

Question 58

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



- A 8
- B 6
- C 7
- D 4

Answer: D

Question 59

How many gold medals did India win in the Special Olympics Games 2019?

- A 85
- B 100
- C 50
- D 60

Answer: A

Question 60

Enzyme ptyalin is seen in-

- A Saliva
- B Gastric juice
- C Intestinal juice

D Pancreatic juice

Answer: A

Question 61

Which element has the greatest tendency to attract electrons?

A Iron

B Sulphur

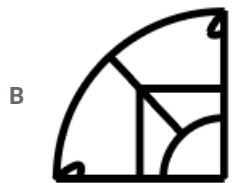
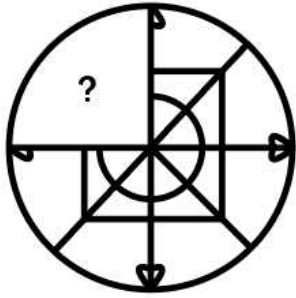
C Fluorine

D Boron

Answer: C

Question 62

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



Answer: D

Question 63

Vulgar fractions have-

- A Their numerators greater than denominators
- B Their denominators as powers of 10
- C Their denominators other than 10, 100, 1000 etc.
- D No representation on the number line

Answer: C

Question 64

How many odd days are there in the first 2000 years ?

- A 3
- B 2
- C 4
- D 0

Answer: D

Question 65

If in a certain language 'KINDLE' is coded as 'ELDNIK', how is 'EXOTIC' coded in that language?

- A CITOXE
- B CXOTLE
- C CIXOTE
- D CITXOE

Answer: A

Question 66

Which of the following is a metalloid?

- A Copper
- B Germanium
- C Aluminium
- D Zinc

Answer: B

Question 67

Six bells toll in intervals of 2, 4, 6, 8, 10 and 12 seconds respectively. If all start tolling together, how many times will they toll together in 30 minutes?

- A 8
- B 16
- C 15
- D 4

Answer: B

Question 68

Shubha Mudgal is associated with-

- A Classical dance
- B Mural painting
- C Sports
- D Hindustani classical music

Answer: D

Question 69

The refractive indices of four substances A, B, C and D are 1.33,1.47, 1.71 and 1.65 respectively. In which substance is the speed of light maximum?

- A B
- B A
- C C
- D D

Answer: B

Question 70

What is the frequency range of ultrasound?

- A Below 20 Hz
- B Between 200 Hz and 2000Hz
- C Above 20 kHz
- D Between 20 Hz and 20 kHz

Answer: C

Question 71

The white powder formed when magnesium ribbon burns is-

- A Magnesium carbonate
- B Magnesium oxide
- C Magnesium sulphate
- D Magnesium hydroxide

Answer: B

Question 72

Two pipes P and Q can fill a tank in 40 minutes and 30 minutes respectively. Both pipes are opened simultaneously and after 10 minutes pipe Q is closed. In what time after this will the tank get filled up?

- A 16 minutes
- B 15 minutes
- C 16 minutes 40 seconds
- D 15 minutes 20 seconds

Answer: C

Question 73

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

Eight friends— A, B, C, D, E, F, G and H are sitting around a circular table facing the centre. Each one of them likes different brands of television—Onida, Sony, Samsung, Micromax, TCL, LG, Toshiba and Sansui, but not necessarily in the same order.

A sits third to the right of the person who likes Sansui. A does not like Samsung. E is not an immediate neighbour of H. C sits on the immediate right of the person who likes Samsung. Neither A nor H likes TCL or a Sony. The person who likes TCL is not an immediate neighbour of the person who likes Sansui. The person who likes Onida sits second to the left of E. The person who likes Onida is an immediate neighbour of the both persons who like LG and Toshiba. Person who likes Toshiba sits third to the right of B. B does not like TCL. F is not an immediate neighbour of A. G is not an immediate neighbour of the person who likes Onida. Only two people sit between the person who likes Toshiba and H. The persons who like TCL and the Sony are immediate neighbours of each other.

Which of the following brands of television is liked by H ?

- A Onida
- B Sansui
- C Sony
- D Toshiba

Answer: A

Question 74

The Australian cricketer Ricky Ponting is also known as-

- A Ponter
- B Punter
- C Rickster

D Ponds

Answer: B

Question 75

Which Indian state has Agartala as its capital ?

A Nagaland

B Mizoram

C Manipur

D Tripura

Answer: D

Question 76

Find the ODD one out from the given options.

A 728

B 346

C 125

D 215

Answer: C

Question 77

What is the thrust on unit area called?

A Surface area

B Pressure

C Density

D Volume

Answer: B

Question 78

What is the area of the sector covered by the hour-hand of a clock while moving from the number 12 to number 3, if the length of the hour-hand is 7 cm ?

A 17 cm^2

B 70 cm^2

C 38.5 cm^2

D 35 cm^2

Answer: C

Question 79

In a shooting test, the probabilities of hitting the target are $\frac{1}{2}$ for A, $\frac{2}{3}$ for B and $\frac{3}{4}$ for C. If they fire at the same target, what is the probability that only one of them hits the target?

A $\frac{1}{6}$

B $\frac{2}{3}$

C $\frac{3}{8}$

D $\frac{1}{4}$

Answer: D

Question 80

Ten observations written in descending order are 45, 34, 32, 30, $2x - 13$, $x + 1$, 17, 15, 14 and 8. If the median is 24, then find 'x'.

A 15

B 20

C 12

D 18

Answer: B

Question 81

If the manufacturer gains 10%, the wholesale dealer gains 15% and the retailer gains 25%, then find the cost of production of a table, if the retail price was Rs.1265.

A Rs.900

B Rs.850

C Rs.750

D Rs.800

Answer: D

Question 82

Sum of ages of father and son is 8 years more than the age of mother. Son was born when the mother was 22 years. How old is the father?

A 40 years

B 30 years

C 36 years

D 38 years

Answer: B

Question 83

Find the wrong number in the given series.

14, 20, 29, 39, 56, 74

A 14

B 29

C 20

D 39

Answer: D

Question 84

What is the total number of members nominated by the President to the Lok Sabha and the Rajya Sabha?

A 14

B 18

C 16

D 12

Answer: A

Question 85

A basic solution changes the colour of turmeric indicator from-

A Yellow to blue

B Yellow to green

C Yellow to red

D Yellow to black

Answer: C

Question 86

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

Statement:

$$H \leq I < L \geq A > Q$$

Conclusions:

I. $H < L$

II. $H \geq L$

III. $Q < H$

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

Answer: A

Question 87

Find the ODD one out from the given options.

- A Diving
- B Driving
- C Sailing
- D Swimming

Answer: B

Question 88

Two motorists travelling in opposite directions meet at some point in between. After this they take 9 and 16 hours to reach their respective destinations. What is the ratio of their speeds?

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

Answer: C

Question 89

Which hormone is released during emergency situation?

- A Adrenaline
- B Norepinephrine
- C Corticotropin
- D Cortisol

Answer: A

Question 90

Two buses start from the opposite points of a main road, 150 km apart. The first bus runs for 25 km and takes a right turn and then runs for 15 km. It, then turns left and runs for another 25 km and takes the direction back to reach the main road. In the meantime, due to minor breakdown, the other bus has run only 35 km along the main road. What would be the distance between the two buses at this point?

- A 65 km
- B 75 km
- C 80 km
- D 85 km

Answer: A

Question 91

Seven years ago, the ratio of the ages of Ajith and Ganesh was 5 : 7. If the product of their present ages is 616, find the ratio of their present age.

- A 15 : 17
- B 17 : 15
- C 12 : 13
- D 11 : 14

Answer: D

Question 92

The chemical formula K_2SO_4 represents-

- A Potassium nitrate
- B Potassium chloride
- C Aluminium sulphate
- D Potassium sulphate

Answer: D

Question 93

Two cones are such that the ratio of their volumes is 1 : 10 and ratio of their heights is 2 : 5. What is the ratio of their base radii?

- A 1 : 2
- B 7 : 25
- C 2 : 1
- D 5 : 2

Answer: A

Question 94

In which part of the human body would you find the smallest bone?

- A Ears

- B Knees
- C Fingers
- D Nose

Answer: A

Question 95

A pipe can fill a cistern in 20 minutes, but an outlet can empty it in 28 minutes. When both the pipes are opened, in what time is the cistern filled?

- A 96 minutes
- B 56 minutes
- C 70 minutes
- D 72 minutes

Answer: C

Question 96

P and Q can individually do some work in 60 and 75 days respectively. They started working together. But P left after sometime. Q completed the work in another 30 days. In how many days after starting the work did P leave?

- A 25
- B 24
- C 20
- D 32

Answer: C

Question 97

1 is placed to the west of 2, and 3 is placed to the south of 1. What is the direction of 2 with respect to 3?

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

Answer: B

Question 98

Which of the following hormones stimulates milk production after child birth?

- A Estrogen

- B Progestin
- C Androgen
- D Prolactin

Answer: D

Question 99

There are three cans of milk containing 36 litres, 45 litres and 72 litres. Find the biggest measure that can measure all these exactly.

- A 7 litres
- B 8 litres
- C 9 litres
- D 15 litres

Answer: C

Question 100

If 20 Coulombs of charge passes a point in a circuit in 1 second, what is the value of the current flowing?

- A 20 Ampere
- B 10 Ampere
- C 5 Ampere
- D 15 Ampere

Answer: A

RRB JE
28th May 2019
Shift-2

Instructions

For the following questions answer them individually

Question 1

Find the greatest possible measure that will measure 7 litres, 3 litres 850 ml, 12 litres 950 ml exactly.

- A 350 ml
- B 500 ml
- C 400 ml
- D 215 ml

Answer: A

Question 2

The Prime Minister, Union Cabinet Minister, Chief Minister and Council of Ministers are all members of-

- A National Development Council
- B Planning Commission
- C Regional Council
- D Zonal Council

Answer: A

Question 3

If $x^{0.009} = 0.01$, find the value of 'x'.

- A 0.9
- B 9
- C 0.0009
- D 0.09

Answer: A

Question 4

Which celestial body does NOT twinkle in the night sky?

- A Star
- B Three middle stars in the Orion constellation
- C Planet
- D Sirius

Answer: C

Question 5

Total surface area of a hemisphere is 504 cm^2 . What is its curved surface area?

- A 336 cm^2
- B 428 cm^2
- C 256 cm^2
- D 316 cm^2

Answer: A

Question 6

What is the ratio of potential difference 'V' applied between the ends of a conductor and the current 'I' flowing through it called?

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

Answer: A

Question 7

If the HCF of a set of numbers is 8, which one cannot be their LCM?

- A 200
- B 360
- C 150
- D 56

Answer: C

Question 8

The primary role of carbohydrates is to to all cells in the body.

- A Promote growth
- B Supply energy
- C Maintain water balance
- D Repair of tissues

Answer: B

Question 9

For what value of 'a' will the polynomials $(ax^3 + 4x^2 + 3x - 4)$ and $(x^3 - 4x + a)$ leave the same remainder when divided by $(x - 3)$?

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

Answer: D

Question 10

On the bank of which of the following rivers is the Indian city Jammu located?

- A Indus
- B Chenab
- C Tawi
- D Sutlej

Answer: C

Question 11

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

Seven executives— P, Q, R, S, T, U and V are sitting along a circle facing the centre. P is between V and S. R is second to the right of S and is between Q and U. Q is not the neighbour of T.

What is the position of T?

- A Second to the left of R
- B Third to the left of P
- C Between R and V
- D To the immediate left of V

Answer: D

Question 12

In how many years will a sum increase by $33\frac{1}{3}\%$ of the principal at 5% Simple Interest per annum?

- A $\frac{2}{3}$ years
- B 30 years
- C 9 years
- D 10 years

Answer: A

Question 13

Simplify: $\sqrt{(272)^2 - (128)^2}$

- A 240
- B 204
- C 280
- D 260

Answer: A

Question 14

P does some work in 4 hours. The same is done by P and Q together in 3 hours, Q and R together in 2 hours. Working together, how many hours will they take to do the same work?

- A $\frac{6}{7}$ hours
- B $\frac{3}{2}$ hours
- C $\frac{4}{3}$ hours
- D $\frac{5}{7}$ hours

Answer: C

Question 15

In which of the following countries did the Middle East and North Africa (MENA) World Economic Forum take place in April 2019?

- A Syria
- B Saudi Arabia
- C Egypt
- D Jordan

Answer: D

Question 16

In a show room, $\frac{1}{9}$ of the shirts were striped, $\frac{5}{8}$ of the remaining had checks and the rest were plain colored. If there were 81 plain colored shirts, what portion of the stock were checked ones ?

- A 243
- B 124
- C $\frac{7}{9}$
- D $\frac{5}{9}$

Answer: D

Question 17

Which of the following is NOT a periodic property in the periodic table?

- A Radioactivity
- B Electronegativity
- C Valency
- D Atomic size

Answer: A

Question 18

Polishing a surface is done for what purpose?

- A To minimise the irregularities and to make it smooth
- B To provide better grip
- C To make it rough
- D To increase the friction

Answer: A

Question 19

Venkatesh sold a piece of land for Rs.1200000. He gave one-third of the selling price to his wife, and $\frac{2}{5}$ of the rest he invested in his son's business, and $\frac{1}{6}$ of the rest he gave as donation for the culture activity of a school. What amount did he give as donation?

- A Rs.120000
- B Rs.80000
- C Rs.320000
- D Rs.400000

Answer: B

Question 20

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

- A $\sqrt{3}$
- B -2
- C 0

D 2

Answer: B

Question 21

Dandi March is associated with

A Wheat

B Rice

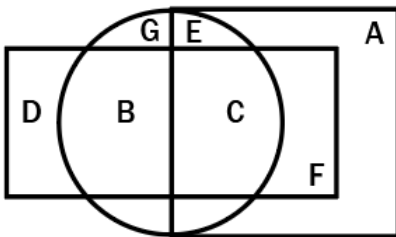
C Salt

D Sugar

Answer: C

Question 22

In the given figure, the circle represents soldiers, rectangle represents professors, and square represents painters. Which region represents the persons who are professors and painters but not soldiers?



A E

B B

C C

D F

Answer: D

Question 23

International Economic Research Annual (IERA) Award was instituted by-

A ECGC

B RBI

C EXIM bank

D SEBI

Answer: C

Question 24

Which among the following is NOT an identity?

A $\sin 2\theta = 2 \sin \theta \cos \theta$

B $\sin^2 \theta - \cos^2 \theta = 0$

C $\cos 2\theta = \cos^2 \theta - \sin^2 \theta$

D $\tan 2\theta = \frac{2 \tan \theta}{1 - \tan^2 \theta}$

Answer: B

Question 25

Which of the following gases is produced when an acid reacts with metal carbonate or metal hydrogen carbonate?

A Hydrogen

B Carbon dioxide

C Oxygen

D Nitrogen

Answer: B

Question 26

Basha walked towards south and then turned left. Again he turned left and turned right. How many times did he turn toward east?

A Three times

B One time

C Four times

D Two times

Answer: D

Question 27

If $\sin 2A = 2 \sin^2 A$, then find the value of 'A' ($A \neq 0$ and A is acute).

A 30°

B 45°

C 60°

D 90°

Answer: B

Question 28

Which of the following is a seedless fruit?

A Guava

B Banana

C Water Melon

D Mango

Answer: B

Question 29

Evaluate: $\left(\frac{\tan 20^\circ}{\operatorname{cosec} 70^\circ}\right)^2 + \left(\frac{\cot 20^\circ}{\sec 70^\circ}\right)^2 + (2 \tan 15^\circ \tan 75^\circ)$

A 3

B $\frac{1}{2}$

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

D 1

Answer: A

Question 30

The first match of the first edition of Ranji Trophy was held in the year-

A 1970

B 1956

C 1952

D 1934

Answer: D

Question 31

Which of the following is NOT a function of our teeth?

A Swallowing

B Chewing

C Biting

D Cutting

Answer: A

Question 32

The difference between the length and breadth of a rectangle is 23 m. If its perimeter is 206 m, then find its area.

A 1520 m^2

B 2420 m^2

C 2520 m^2

D $2480 m^2$

Answer: C

Question 33

If $\sqrt{15} = 3.87$, then find the value of $\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}}$.

A 4.87

B 7.87

C 6.87

D 5.87

Answer: B

Question 34

Who won the 'Laureus 2017 Sports man of the Year' award ?

A Michael Phelps

B Cristiano Ronaldo

C Roger Federer

D Usain Bolt

Answer: D

Question 35

In a certain code, 'HUMIDITY' is written as 'UHMIIDTY'. How is 'POLITICS' written in that code?

A POILTISC

B OPLITISC

C OPLIITCS

D OPILITCS

Answer: C

Question 36

Complete the series.

0.5, 0.55, 0.65, 0.8, (...)

A 0.85

B 1

C 0.9

D 0.95

Answer: B

Question 37

Relative atomic mass of an element is _____ of the mass of one of carbon-12 atom.

- A 1/5
- B 1/20
- C 1/12
- D 1/10

Answer: C

Question 38

Suresh invested a sum of money at Compound interest. It amounted to Rs. 2420 in 2 years and Rs. 2662 in 3 years. Find the rate per cent per annum.

- A 14%
- B 5%
- C 10%
- D 12%

Answer: C

Question 39

What type of nuclear reaction is responsible for liberation of energy in the sun?

- A Nuclear fission
- B Nuclear fusion
- C Nuclear destruction
- D Nuclear generation

Answer: B

Question 40

In which country was 'acupuncture' first devised?

- A Japan
- B Sri Lanka
- C India
- D China

Answer: D

Question 41

Which is the first permanent research base station of India in Antarctica?

- A Maitri
- B Dakshin Gangotri
- C Bharat
- D Agni

Answer: B

Question 42

According to Thomson's model, atom as a whole is-

- A Heavy
- B Positively charged
- C Electrically neutral
- D Negatively charged

Answer: C

Question 43

Working together for two days P and Q get paid by Rs.1200 and Rs.400 respectively for the completion of a job. How many days will Q take to finish the job if he worked alone?

- A 8
- B 10
- C 4
- D 6

Answer: A

Question 44

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

Statements:

- 1) Madhan sings beautifully.
- 2) Madhan is an Italian.

Conclusions:

- I. Italians sing beautifully.
- II. All who sing well are Italians.

- A Both conclusions I and II follow
- B Only conclusion I follows

C Neither conclusion I nor II follows

D Only conclusion II follows

Answer: C

Explanation:

Statements:

1) Madhan sings beautifully.

2) Madhan is an Italian.

Conclusions:

I. Italians sing beautifully.

II. All who sing well are Italians.

It is not necessary that all italians will sing beautifully and It is also not necessary that all who sing well must be italians.

Neither conclusion I nor II follows

Question 45

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

13(4624)33

15(5735)42

11(????)37

A 4382

B 4832

C 3482

D 4823

Answer: B

Explanation:

13(4624)33

15(5735)42

11(????)37

13(4624)33

here $13 + 33 = 46$ and $4 \times 6 = 24$

similarly

15(5735)42

here $15 + 42 = 57$ and $5 \times 7 = 35$

so

11(????)37

here $11 + 37 = 48$ and $4 \times 8 = 32$

= 4832

Question 46

Which of the following laws or principle says that "when a body is immersed fully or partially in a fluid, it experiences an upward force that is equal to the weight of the fluid displaced by it"?

A Archimedes principle

B Kepler's Law

C Pascal's Law

D Newton's law

Answer: A

Question 47

Find the wrong number in the given series.

9, 27, 108, 541, 3240

A 27

B 108

C 9

D 541

Answer: D

Explanation:

9, 27, 108, 541, 3240

$$9 \times 3 = 27$$

$$27 \times 4 = 108$$

$$108 \times 5 = 540$$

$$540 \times 6 = 3240$$

so wrong term is 540

Question 48

Anil walked 50 m towards east direction and he took left turn and walked 20 m. Again he turned left and walked 20 m. Which direction is he from the starting point?

A North east

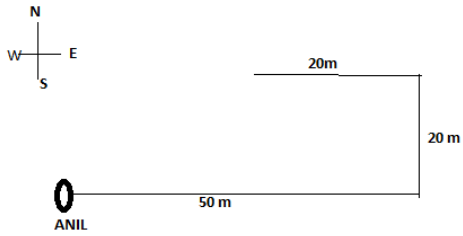
B South west

C South east

D North west

Answer: A

Explanation:



He is in North east direction from the starting point

Question 49

The average age of a family of five members is 26. If the youngest member of the family is now ten years, what was the average of the family one year before the youngest member was born?

- A 16 years
- B 18 years
- C 19 years
- D 20 years

Answer: C

Question 50

Pantothenic acid is commonly called-

- A Vitamin E
- B Vitamin B5
- C Vitamin C
- D Vitamin B12

Answer: B

Question 51

When energy consumed by one electrical bulb is 0.4 kilowatt-hours, what is the energy consumed by 5 such bulbs?

- A 5 kWh
- B 2 kWh
- C 6 kWh
- D 4 kWh

Answer: B

Explanation:

energy consumed by one electrical bulb = 0.4 kilowatt-hours

energy consumed by five electrical bulb = 0.4×5

$$= 2 \text{ kWh}$$

Question 52

In a certain code, 679 means 'how are you'; 147 means 'how is life' and 569 means 'you are wonderful'. Which numeral in that language means 'you'?

- A 7
- B 1
- C 5 or 7
- D 6 or 9

Answer: D

Explanation:

679 means 'how are you'

147 means 'how is life'

569 means 'you are wonderful'

here

679 means 'how are you'

147 means 'how is life'

in the above two sentence 'how ' is common which means 7

679 means 'how are you'

569 means 'you are wonderful'

in the above two sentence 'are you' is common which means 6 or 9

so,

'you' means 6 or 9

Question 53

The phenomenon of change of a liquid into vapours at any temperature below its boiling point is called-

- A Boiling
- B Condensation
- C Melting
- D Evaporation

Answer: D

Question 54

Express 150% as a fraction.

A $\frac{2}{3}$

B $\frac{3}{20}$

C $\frac{3}{2}$

D $\frac{3}{5}$

Answer: C

Explanation:

$$\frac{150}{100}$$

$$\frac{15}{10}$$

$$\frac{3}{2}$$

Question 55

Which device converts electrical signals to sound?

A Microphone

B Wireless microphone

C Loud speaker

D Amplifier

Answer: C

Question 56

Of three numbers A , B and C, B = 2A = 3C. Their average is 44. What is the smallest of these numbers ?

A 72

B 28

C 36

D 24

Answer: D

Explanation:

$$B = 2A = 3C \text{ . let } A = X$$

$$X + 2X + 2X/3 = 132$$

$$\frac{(3X+6X+2X)}{3} = 132$$

$$\frac{11X}{3} = 132$$

$$11X = 132 \times 3 = 396$$

$$X = 396 \div 11 = 36$$

Therefore the numbers are

$$X = 36$$

$2X=72$ and

smallest no = $\frac{2X}{3} = 24$

Question 57

What is the theme of "International Day of Happiness", 2019?

- A Think equal, build smart, innovate for change
- B Healthy sleep, healthy aging
- C Act to change laws that discriminate
- D Happier together

Answer: D

Question 58

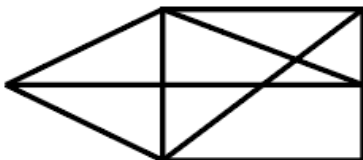
Which of the following is used in the manufacture of cement?

- A Iron
- B Calcium oxide
- C Copper
- D Sodium carbonate

Answer: B

Question 59

How many triangles are there in the given figure?



- A 12
- B 13
- C 15
- D 18

Answer: C

Question 60

Complete the Series.

AB, DE, HI, MN, (...)

- A DE
- B ST

C SY

D CD

Answer: B

Explanation:

AB, DE, HI, MN, (...)

after AB one letter is skipped then DE

after DE two letters are skipped then HI

after HI three letters are skipped then MI

after MN four letters are skipped then ST

Question 61

If $A : B = 2 : 3$ and $B : C = 3 : 4$, then find $A : B : C$.

A 6 : 9 : 10

B 2 : 3 : 4

C 6 : 3 : 10

D 2 : 4 : 9

Answer: B

Explanation:

$A : B = 2 : 3$ and $B : C = 3 : 4$

given

$A = 2$

$B = 3$

$C = 4$

$A : B : C = 2 : 3 : 4$

Question 62

Deficiency of _____ causes night blindness.

A Vitamin B

B Vitamin A

C Vitamin C

D Vitamin D

Answer: B

Question 63

What causes cholera?

A Algae

B Virus

C Bacteria

D Fungus

Answer: C

Question 64

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

DFH : IKM :: OQS : ?

A XTV

B TVX

C UVW

D XVT

Answer: B

Explanation:

DFH : IKM :: OQS : ?

after D one letter is skipped that is E then F comes

after F one letter is skipped that is G then H comes

after H immediate letter comes which is I

after I one letter is skipped that is J then K comes

after K one letter is skipped that is L then M comes

similarly for OQS

after O one letter is skipped that is P then Q comes

after Q one letter is skipped that is R then S comes

after T one letter is skipped that is U then V comes

after V one letter is skipped that is W then X comes

after X one letter is skipped that is Y then Z comes

so TVX

Question 65

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

Statement:

Industrial revolution which first started in Europe has brought about modern age.

Conclusions:

I. Disparity between rich and poor results in revolution.

II. Revolution overhauls society.

A Only conclusion II follows

B Either conclusion I or II follows

C Only conclusion I follows

D Neither conclusion I nor II follows

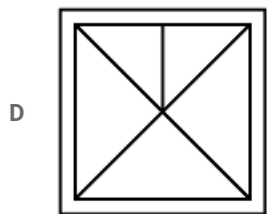
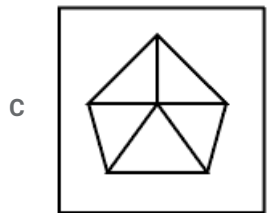
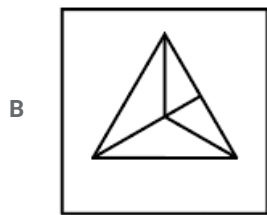
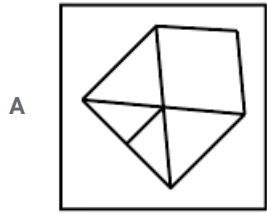
Answer: A

Explanation:

Conclusion 1 follows the statement as the Revolution brought the modern age which is difference in rich and poor

Question 66

Find the ODD one out from the given options.



Answer: B

Question 67

Who among the following holds the record for scoring most goals in FIFA World Cup history?

- A Gerd Mueller
- B Just Fontaine
- C Cristiano Ronaldo
- D Miroslav Klose

Answer: D

Question 68

If 'CORRECTION' is coded as 'DPSSFUDUJPO', how would 'EMOTION' be coded?

- A FNPUPQJ
- B FNPUJPO
- C FPNUJPO
- D FNPUJOP

Answer: B

Explanation:

'CORRECTION' is coded as 'DPSSFUDUJPO'

In Alphabetical series

after C D comes

after O P comes

after R S comes

after R S comes

after E F comes

after C D comes

after T U comes

after I J comes

after O P comes

after N O comes

similarly for emotion

after E F comes

after M N comes

after O P comes

after T U comes

after I J comes

after O P comes

after N O comes

FNPUJPO

Question 69

Which is the most common material used exclusively for filament of electric lamps?

- A Constantan
- B Silver
- C Tungsten
- D Aluminium

Answer: C

Question 70

Complete the series.

BJ, CL, FO, KS, (...)

- A RX

B OT

C EX

D UX

Answer: A

Explanation:

BJ, CL, FO, KS, (...)

First letter of words

After B zero word skip then C

After C two word skip then F

After F four word skip then K

After K six word skip then R

second letter of words

after J one letter is skipped then L

after L two letter is skipped then O

after O three letter is skipped then S

after S four letter is skipped then X

so new term RX

Question 71

Which of the following rivers is known as the 'Dakshina Ganga?'

A Mahanadi

B Cauvery

C Godavari

D Krishna

Answer: C

Question 72

A sample of soil is mixed with water and allowed to settle. The clear supernatant solution turns the pH paper yellowish-orange. Which of the following would change the colour of this pH paper to greenish-blue?

A An antacid

B Common salt

C Lemon juice

D Vinegar

Answer: A

Question 73

Which of the following statements is NOT correct?

- A Graphite is black and soft
- B Graphite is made up of carbon only
- C Graphite does not conduct electricity
- D Graphite burns on strong heating to give carbon dioxide

Answer: C

Question 74

The net power of the number of lenses in an optical instrument is the of the individual powers of lenses.

- A Sum of squares
- B Product
- C Algebraic sum
- D Product of squares

Answer: C

Question 75

Meena is 15 years elder to Reena. 15 years back she was thrice as old as Reena. What is Reena's present age?

- A 27 years
- B 27.5 years
- C 22.5 years
- D 15 years

Answer: C

Explanation:

Meena is 15 years elder to Reena. 15 years back she was thrice as old as Reena. What is Reena's present age?

$$Meena = Reena + 15 \quad (1)$$

15 yrs ago

$$(Meena - 15) = 3(Reena - 15) \quad (2)$$

put (1) in (2) we get,

$$((Reena + 15) - 15) = 3(Reena - 15)$$

$$2Reena = 45$$

$$Reena = 22.5 \text{ years}$$

Question 76

A vessel contains some amount of pure milk. 8 litres of water is added to dilute the milk, after taking out 8 litres of pure milk. Once again 8 litres of the resulting mixture is removed and 8 litres of water is added. The amount of pure milk in the second mixture is 49 litres. What amount of pure milk was in the container originally ?

- A 80 litres

- B 100 litres
- C 64 litres
- D 72 litres

Answer: C

Question 77

Which of these is a wind instrument?

- A Flute
- B Ektara
- C Sarod
- D Santoor

Answer: A

Question 78

_____ is the conceptual luxury space hotel in low earth orbit by Orion Span.

- A Elon Musk Space Station
- B Aurora Space Station
- C Tiangong
- D NASA

Answer: B

Question 79

Which of these devices is used to study the activity of brain?

- A Autoanalyser
- B ECG
- C EEG
- D Dialyser

Answer: C

Question 80

Which of the following is an ionic compound ?

- A HCl

B NaCl

C NH_3

D CCl_4

Answer: B

Question 81

Find the wrong number in the given series.

7, 8, 12, 21, 37, 61, 98

A 61

B 37

C 12

D 7

Answer: A

Explanation:

7, 8, 12, 21, 37, 61, 98

here the difference is squares of the no.

$$8 - 7 = 1^2 = 1$$

$$12 - 8 = 2^2 = 4$$

$$21 - 12 = 3^2 = 9$$

$$37 - 21 = 4^2 = 16$$

$$61 - 37 = 5^2 = 25$$

$$98 - 61 = 6^2 = 36$$

so wrong term is 61

Question 82

Name the former Lok Sabha Speaker and the ten-time MP of the Lok Sabha who passed away in 2018.

A M. Karunanidhi

B Jyoti Basu

C Huluvadi G. Ramesh

D Somnath Chatterjee

Answer: D

Question 83

Complete the series.

2, 5, 10, 17, 26, (...)

A 34

B 35

C 33

D 37

Answer: D

Explanation:

2, 5, 10, 17, 26, (...)

$$2 + 3 = 5$$

$$5 + 5 = 10$$

$$10 + 7 = 17$$

$$17 + 9 = 26$$

so

$$26 + 11 = 37$$

Question 84

A person paid a bill of Rs.25 that included 30 paise as sales tax at the rate of 6% on taxable items. What was the cost of the tax free items?

A Rs.20

B Rs.19.70

C Rs.15

D Rs.18

Answer: B

Explanation:

Total cost of the items he purchased = Rs.25

Given that out of this Rs.25, 30 Paise is given as tax

= Total tax = 30 Paise

Total tax incurred = 30 Paise = = Rs. $\frac{30}{100}$

let the cost of the tax free items = x

given tax rate = 6%

$$\left(25 - \frac{30}{100} - x\right) \frac{60}{100} = \frac{30}{100}$$

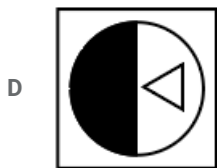
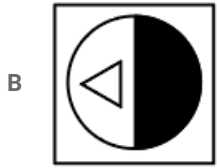
$$= 6(25 - 0.3 - x) = 30$$

$$= (25 - 0.3 - x) = 5$$

$$x = 25 - 0.3 - 5 = 19.7$$

Question 85

Find the ODD one out from the given options.



Answer: D

Explanation:

here in all the three fig the base of small triangle is in side of shaded part of circle except fourth fig

Question 86

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

Eight captains of different hockey teams— Canada, Czech Republic, Finland, Russia, Sweden, United states, Europe and North America are sitting around a circular table and are facing the center, but not necessarily in the same order. Finland captain sits third to the left of the Sweden captain. Only two people sit between the Canada captain and Europe captain. Neither the Canada captain nor Europe captain is an immediate neighbour of the Finland captain. The captain of North America sits second to the right of the United states captain. United states captain is not an immediate neighbour of the Finland captain. The Canada captain sits third to the left of the Finland captain. Captains of Russia and Czech Republic are not immediate neighbours. Russia captain sits third to the left of the United states captain.

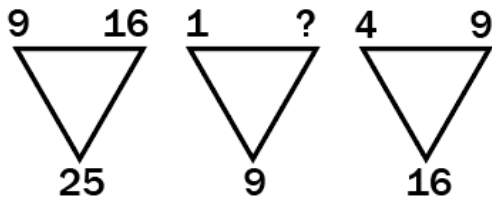
Who among the following captains is sitting between the captain of Canada and Sweden ?

- A Finland
- B United states
- C Europe
- D North America

Answer: B

Question 87

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



A 6

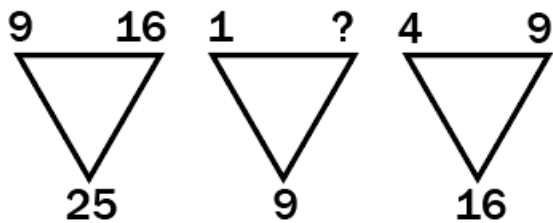
B 2

C 4

D 8

Answer: C

Explanation:



in first fig

all are the squares of 3,4,5

similarly

in third fig

all are the squares of 2,3,4

similarly

in second fig

all are the squares of 1,2,3

so ans is $2^2 = 4$

Question 88

Carbon compounds have low melting and boiling points because of the nature.

A Metallic

B Ionic

C Covalent

D Coordinate

Answer: C

Question 89

From which part of the plant is tea obtained ?

- A Roots
- B Stem
- C Seeds
- D Leaves

Answer: D

Question 90

Which number will best complete the relationship given below?

4 : 20 :: 5 : ?

- A 37
- B 42
- C 35
- D 30

Answer: D

Explanation:

4 : 20 :: 5 : ?

here after 4 , 5 comes which means $4 \times 5 = 20$

similarly

after 5 , 6 comes which means $5 \times 6 = 30$

Question 91

P starts from X towards Y, 5 km apart at 9 AM at a speed of 5 km/h. Q starts from X at 9.45 AM at a speed of 10 km/h. After reaching Y, P starts back towards X. Likewise, Q reaches Y and returns. When do they meet?

- A 10:10 AM
- B 10:12 AM
- C 10:15 AM
- D 10:20 AM

Answer: A

Question 92

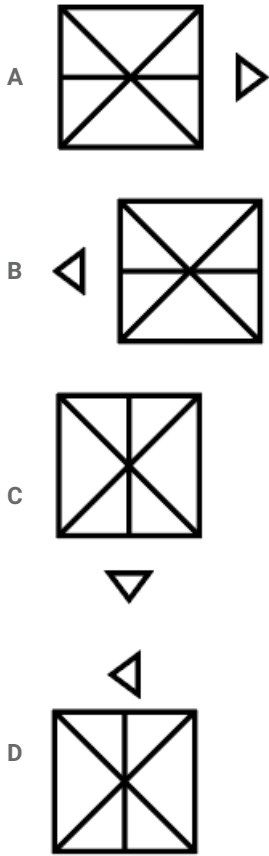
What is the marked price of an article if there is a profit of Rs.7500 while selling at 10% discount with profit of 20% ?

- A Rs.40000
- B Rs.45000
- C Rs.36000
- D Rs.50000

Answer: D

Question 93

Find the ODD one out from the given options.



Answer: D

Explanation:

IN all the first three fig , the line passes between the triangles are parallel to the base of small triangle except for fourth fig

Question 94

A train 120 m long passesa pole in 12 seconds. What is its speed?

- A 42.5 km/h
- B 36 km/h
- C 35 km/h
- D 48 km/h

Answer: B

Explanation:

$$\begin{aligned} \text{Speed} &= \text{distance} \div \text{time} \\ &= 120m \div 12sec \\ &= 10m/s \end{aligned}$$

change into km/hr by mul it by $\frac{18}{5}$

$$10 \frac{18}{5}$$

36 km/h

Question 95

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

Statements:

- 1) Some ants are parrots.
- 2) All apples are parrots.

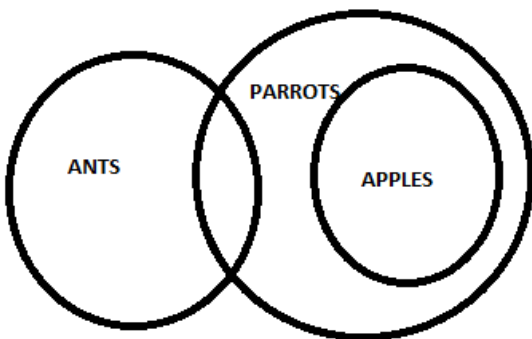
Conclusions:

- I. Some parrots are apples.
- II. Some apples are ants.

- 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: B

Explanation:



- I. Some parrots are apples.

All apples are parrots so some parrots are also apple

- II. Some apples are ants.

No, there is no connection between Apples and Ants only ants and parrots has connection so, Only conclusion I follows

Question 96

Islets of Langerhans is found in-

- A Pituitary

- B Pancreas
- C Spleen
- D Liver

Answer: B

Question 97

The potential difference across a $3\ \Omega$ resistor is 6 Volts. What is the current flowing in the resistor?

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

Answer: D

Question 98

A machine bought for Rs.28000 is sold at a loss of 30%. What is the selling price?

- A Rs.19600
- B Rs.21000
- C Rs.21600
- D Rs.20600

Answer: A

Explanation:

30% = loss%

loss

$$= \frac{30}{100} 28000$$

$$= 8400$$

$$\text{c.p} = 28000$$

Selling price will be ,

$$\text{Cost price} - \text{loss} = 28000 - 8400$$

$$\text{Rs } 19600$$

Question 99

India's first National Centre for Marine Bio-diversity (NCMB) is located in-

- A Puducherry
- B Bhav Nagar
- C Jamnagar

D Mumbai

Answer: C

Question 100

If the diagonal of a cube is $\sqrt{12}$ cm, then find its volume.

A 24 cm^3

B 10 cm^3

C 16 cm^3

D 8 cm^3

Answer: D

Explanation:

diagonal of a cube = $\sqrt{12}$ cm

$$\sqrt{3} \text{side} = \sqrt{12} \text{ cm}$$

$$\text{side} = \frac{\sqrt{12}}{\sqrt{3}}$$

$$= 2 \text{ cm}$$

$$\text{vol} = \text{side}^3 = 2^3 = 8 \text{ cm}^3$$

RRB JE
28th May 2019
Shift-3

Instructions

For the following questions answer them individually

Question 1

A and B enter into a partnership with Rs.50000 and Rs. 60000 respectively. C joins them after 'x' months, contributing Rs.70000 and B leaves 'x' months before the end of the year. If they share the profit in the ratio of 20 : 18 : 21, then find the value of 'x'.

A 5

B 3

C 6

D 4

Answer: B

Explanation:

A invested his capital for 12 months

given that,

B and C invested his capital for (12 - x) months

as we know that

$$investment \times time = profit$$

Ratio of profits os A, B, C

$$=(50000 \times 12) : [60000 \times (12-x)] : [70000 \times (12-x)] = 20 : 18 : 21$$

$$60:6(12-x):7(12-x) = 20:18:21$$

to equate multiply by 3

$$20:18:21=60:54:63$$

so

$$60 : 6 \times (12-x) : 7 \times (12-x) = 60 : 54 : 63$$

$$60 : (72-6x) : (84-7x) = 6060 : 5454 : 6363$$

$$\text{So, } 72-6x=54$$

$$=6x=18$$

$$x=3$$

Question 2

What does Vitamin K deficiency lead to?

A All of the options

B Problem in blood coagulation

C Problem in calcium metabolism

D Problem in digestion

Answer: B

Question 3

A cube and a sphere have equal height. Find the ratio of their volumes.

- A 6 : π
- B 2 : π
- C 3 : π
- D 4 : π

Answer: A

Explanation:

side = $2r$

vol of cube = $side^3$

vol of sphere = $\frac{4}{3}\pi \times r^3$

ratio = $\frac{(2r)^3}{\frac{4}{3}\pi \times r^3}$

= 6 : π

Question 4

Who is the present Governor of RBI?

- A Dr. D. Subbarao
- B Dr. Raghuram G. Rajan
- C Shaktikanta Das
- D Dr. Urjit R. Patel

Answer: C

Question 5

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

Statements:

1) All buildings are chalks.

2) All boards are chalks.

Conclusions:

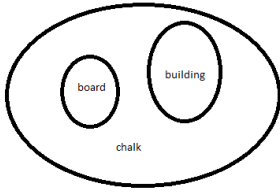
I. Some buildings are boards.

II. Some chalks are boards.

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

Answer: C

Explanation:



I .Some buildings are boards.

this conclusion is false : we dont have any connection about board and building

II . Some chalks are boards.

All board are chalks so some chalks are also board

so ,

Only conclusion II follows

Question 6

A balloon is hovering at a height of 200 m above. A man in a boat on a lake observes it at an elevation of 45° . 100 seconds later, he sees it at an angle of elevation of 30° . What is the speed of the boat ?

A 1.5 m/s

B 2.2 m/s

C 2 m/s

D 1.8 m/s

Answer: A

Question 7

Bharath is facing west. His watch is showing time as 2:00 PM. To which direction will hour hand point?

A North west

B South east

C North east

D South west

Answer: A

Question 8

If a and b are the roots of the equation $3x^2 - 5x + 2 = 0$, then find the value of $\binom{a}{b} + \binom{b}{a}$.

A $\frac{13}{6}$

B $\frac{13}{9}$

C $\frac{13}{2}$

D $\frac{9}{13}$

Answer: A

Explanation:

$$3x^2 - 5x + 2 = 0$$

this a quadratic equation

$$ax^2 - bx + c = 0$$

here,

$$a=3$$

$$b=-5$$

$$c = 2$$

take lcm of 3,2 =6

$3x^2 - 5x + 2 = 0$ by doing middle term factorization

$$3x^2 - 3x - 2x + 2 = 0$$

$$3x(x - 1) - 2(x - 1) = 0$$

$$x-1,3x-2$$

$$\text{so, } x=1, x=\frac{2}{3}$$

$$a=1, b=\frac{2}{3}$$

$$\left(\frac{a}{b}\right) + \left(\frac{b}{a}\right)$$

$$\left(\frac{1}{\frac{2}{3}}\right) + \left(\frac{\frac{2}{3}}{1}\right)$$

$$\left(\frac{3}{2}\right) + \left(\frac{2}{3}\right)$$

$$\frac{13}{6}$$

Question 9

Two types of rice costing Rs.38 per kg and Rs.42 per kg are mixed in equal quantities and sold at Rs.45 per kg. Find the gain per cent.

A 18%

B 12.5%

C 10%

D 15%

Answer: B

Explanation:

Cost of 1 kg rice1 = Rs. 38 per kg

Cost of 1 kg rice2 = Rs. 42 per kg

Total quantity of rice = 1 + 1 = 2

Cost of 2 kg rice = Rs. 80

Selling price of the new mixture = Rs. 45 per kg

selling price of 2 kg rice = 2*45 = Rs. 90

profit = 90 - 80 = Rs. 10

profit = Rs. 10

$$\text{profit\%} = \frac{\text{profit}}{cp} \times 100$$

$$\text{profit\%} = \frac{\text{profit}}{cp} \times 100$$

= 12.5 %

Question 10

Capacities of two workers P and Q are in the ratio 3 : 2. What amount of the daily wages of Rs.400 should be given to P?

A Rs.250

B Rs.260

C Rs.240

D Rs.160

Answer: C

Explanation:

p 'efficiency = 3X days

Q' efficiency= 2X days

Total wage = 400

total efficiency = 3X + 2X = 5X

$$= \frac{\text{total wage}}{\text{total efficiency}}$$

$$= \frac{400}{5X}$$

x = 80

so p's wage = 3 × 80 = 240

Q's wage = 2 × 80 = 160

Question 11

Space X, the private space company is founded by-

A Frank Bunger

B Robert M. Lightfoot Jr.

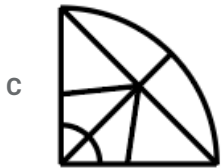
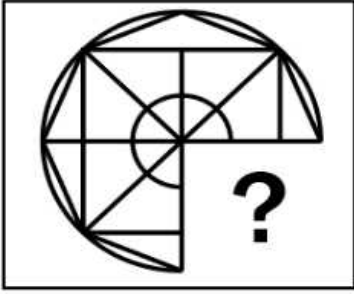
C T. Keith Glennan

D Elon Musk

Answer: D

Question 12

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



Answer: A

Explanation:



Question 13

In the following question, correct the equation by interchanging the two signs.
 $5 + 6 \div 3 - 2 \times 5 = 13$

A $+$ and \times

B \div and $-$

C $+$ and \div

D \div and \times

Answer: A

Explanation:

$$5 + 6 \div 3 - 2 \times 5 = 13$$

Check all the option

$$+ \text{ and } \times$$

$$5 \times 6 \div 3 - 2 + 5 = 13$$

$$5 \times 2 - 2 + 5 = 13$$

$$10 - 2 + 5 = 13$$

$$13 = 13$$

so, $+$ and \times this the correct option

Question 14

The terms 'butterfly' and 'freestyle' are associated with-

- A Archery
- B Swimming
- C Weight lifting
- D Wrestling

Answer: B

Question 15

What is the other name for the unit Coulomb/second?

- A Joule (J)
- B Volt (V)
- C Ampere (A)
- D Second (S)

Answer: C

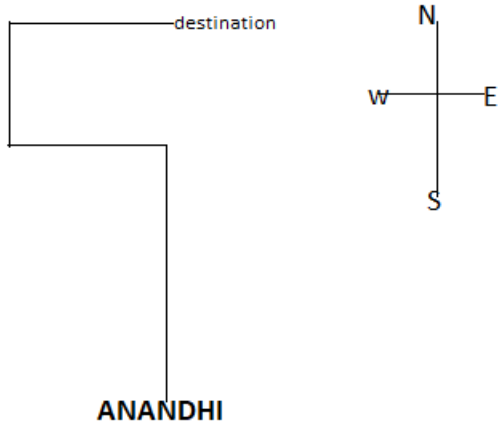
Question 16

Anandhi walked straight for some distance from her home and turned left. She turned two times right and facing east. Which direction is her home facing?

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

Answer: B

Explanation:



North direction

Question 17

Which of the following is a dance drama?

- A Odissi
- B Kathakali
- C Kathak
- D Manipuri

Answer: B

Question 18

Complete the series.

8, 9, 12, 19, 34, (...)

- A 69
- B 65
- C 61
- D 58

Answer: B

Explanation:

8, 9, 12, 19, 34, (...)

first difference

$$9 - 8 = 1$$

$$12 - 9 = 3$$

$$19 - 12 = 7$$

$$34 - 19 = 15$$

second difference

$$3 - 1 = 2$$

$$7 - 3 = 4$$

$$15 - 7 = 8$$

$$15 + 16 = 31$$

now add 31 to 34

$$34 + 31 = 65$$

Question 19

Find the total surface area of a cone of slant height '2l' and radius 'r/2'.

A $2\pi r(l + r)$

B $2\pi rl$

C $\pi r(l + r)$

D $\pi r(l + (r/4))$

Answer: D

Explanation:

$$\text{cone} = \pi r \times l + \pi r^2$$

Given

$$\text{Radius} = \frac{r}{2}$$

$$\text{So Slant height} = 2l$$

$$\text{cone} = \pi r \times l + \pi r^2$$

$$\text{cone} = \pi \times \frac{r}{2} \times 2l + \pi \times \left(\frac{r}{2}\right)^2$$

$$\pi r(l + (r/4))$$

Question 20

The numerical values of the volume and curved surface area of a cone are equal. If 'h' and 'r' represent the height and base radius of the cone, then what is the value of $\left(\frac{1}{h^2}\right) + \left(\frac{1}{r^2}\right)$?

A $\frac{1}{9}$

B $\frac{1}{3}$

C $\frac{2}{9}$

D 9

Answer: A

Explanation:

given that

vol of cone = curved surface area of cone

$$\pi r^2 \frac{h}{3} = \pi r \times l$$

$$r \times \frac{h}{3} = l \dots (1)$$

given that

$$\left(\frac{1}{h^2}\right) + \left(\frac{1}{r^2}\right)$$

$$= \frac{r^2 + h^2}{h^2 \times r^2} \dots (2)$$

as we know that

$$\frac{r^2 + h^2}{l^2} = 1 \dots (3)$$

put (1) and (3) in (2)

$$\frac{r^2 + h^2}{h^2 \times r^2}$$

$$\frac{l^2}{(3 \times l)^2}$$

$$\frac{l^2}{9 \times l^2}$$

$$= \frac{1}{9}$$

Question 21

If $1.5x = 0.04y$, find the value of $\frac{(y - x)}{(y + x)}$.

A $\frac{730}{77}$

B $\frac{73}{77}$

C $\frac{73}{770}$

D $\frac{0.73}{77}$

Answer: B

Explanation:

$$1.5x = 0.04y$$

$$\frac{x}{y} = \frac{0.04}{1.5}$$

$$\frac{(y - x)}{(y + x)} = \frac{(1.5 - 0.04)}{(1.5 + 0.04)}$$

$$= \frac{(1.46)}{(1.54)}$$

$$= \frac{(73)}{(77)}$$

Question 22

Which of the following is CORRECT with respect to the Indian Constitution?

A It is a mixture of several Constitutions

B It is completely based on British Constitution

C It is made only on the basis of Government of India Act, 1935

D It is completely based on Constitution of Canada

Answer: A

Question 23

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

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

- i) R stands seven places before S.
- ii) Third orange gloves is T.
- iii) Second boy after T is U.
- iv) Fourth place in the row is occupied by V.
- v) W stands ahead of R.
- vi) X stands between T and R.
- vii) Z is a girl.

Who among the following stands in the center of the row?

- A Z
- B Y
- C V
- D T

Answer: D

Question 24

If $36^3 \times (4096)^{\frac{1}{2}} \times 144 \times 9 \div (9^3 \times 72^2) = 4^x$, find the value of 'x'.

- A 5
- B 7
- C 12
- D 8

Answer: A

Explanation:

$$36^3 \times (4096)^{\frac{1}{2}} \times 144 \times 9 \div (9^3 \times 72^2) = 4^x$$

we can write this

$$36 \times 36 \times 36 \times 64 \times 144 \times 9 \div (9 \times 9 \times 9 \times 72 \times 72) = 4^x$$

after cancellation the numerator and denominator we get

$$64 \times 16 = 4^x$$

$$4^3 \times 4^2 = 4^x$$

$$x = 5$$

Question 25

Which of the following is the characteristic feature of a virus?

- A Virus does not need any medium to grow
- B Virus breeds fast on dead animals only

C Virus comprises of fat and carcinogen

D Virus multiplies only on hosts

Answer: D

Question 26

Find the ODD one out from the given options.

A 15

B 45

C 75

D 25

Answer: D

Explanation:

15,45,75 are divisible by 3 and 25 is not divisible by 3

$$\frac{15}{3} = 5$$

$$\frac{45}{3} = 15$$

$$\frac{75}{3} = 25$$

$$\frac{25}{3} = 8.3$$

Question 27

B.C.G. vaccine is normally used to prevent-

A Tuberculosis

B Rabies

C Cancer

D Leukaemia

Answer: A

Question 28

Who discovered the fact that sunlight consists of seven colours?

A Faraday

B Newton

C Oersted

D Snell

Answer: B

Question 29

From where does the Sone River originate?

- A Amarkantak Hill
- B Parasnath Hill
- C Trikut Hill
- D Morabadi Hill

Answer: A

Question 30

One day evening, Sai and Swetha were walking towards each other. Swetha's shadow fell on the right side of Sai. Which side was Sai facing?

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

Answer: A

Question 31

Asha was born when her father was 38 years of age. When her brother four years younger was born, her mother was 36 years of age. What is the difference between their parent's ages?

- A 2 years
- B 4 years
- C 6 years
- D 8 years

Answer: C

Explanation:

Father's age when Asha's brother was born = 38 years.

Mother's age when Asha's brother was born = $(36 - 4)$ years = 32 years.

Required difference = $(38 - 32)$ years = 6 years.

Question 32

Which of these digits CANNOT be the last digit in perfect square numbers?

- A 3 and 7
- B 4 and 9
- C 1 and 6

D 1 and 4

Answer: A

Question 33

If $\frac{5}{8}x = 260$, what is the value of x ?

A 67.5

B 65.7

C 62.5

D 40

Answer: C

Question 34

P_1, P_2, P_3 are invested at 4%, 6%, 8% respectively such that the Simple Interests from all the three at the end of the year are equal. If the sum of three investments is Rs.2600, then find the values of P_1, P_2 and P_3 respectively.

A Rs.1000, Rs.900, Rs.700

B Rs.1200, Rs.800, Rs.600

C Rs.1200, Rs.600, Rs.800

D Rs.1100, Rs.800, Rs.700

Answer: B

Explanation:

Let x, y and z be his investments at 4%, 6% and 8% respectively

Simple Interest on x at 4% for 1 year

= Simple Interest on y at 6% for 1 year

= Simple Interest on z at 8% for 1 year

$$\frac{x \times 4 \times 1}{100} = \frac{y \times 6 \times 1}{100} = \frac{z \times 8 \times 1}{100}$$

$$\Rightarrow 4x = 6y = 8z$$

$$\Rightarrow 2x = 3y = 4z$$

$$\text{Hence, we have, } y = \frac{2x}{3} \text{ and } z = \frac{2x}{4} = \frac{x}{2}$$

we know that $x + y + z = 2600$

$$\Rightarrow x + \frac{2x}{3} + \frac{x}{2} = 2600$$

$$\Rightarrow 6x + 4x + 3x = 2600 \times 6$$

$$\Rightarrow 13x = 2600 \times 6$$

$$\Rightarrow x = \frac{2600 \times 6}{13} = 200 \times 6 = 1200$$

i.e., Money invested at 4% = Rs.1200

money invested at 6% = $\$1200 \times \frac{2}{3}$
=800

money invested at 8% = $\$1200 \times \frac{1}{2}$
=600

Question 35

Find the ratio of LCM to HCF of the numbers 99 and 15.

- A 165 : 1
- B 165 : 3
- C 3 : 55
- D 1 : 165

Answer: A

Question 36

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

There are six friends A, B, C, V, U, and T. V, U and T are seated in a circle facing the centre. A, B and C are also seated in the same circle but two of them are not facing the centre (facing opposite direction of the centre). V is second to the left of C. U is second to the right of A. B is third to the left of T. C is second to the right of T. A is seated next to V.

What is the position of T with respect to B in clockwise direction?

- A Fourth to the left
- B Second to the right
- C Third to the right

D Third to the left

Answer: C

Question 37

If $x^{\frac{1}{3}} + y^{\frac{1}{3}} - z^{\frac{1}{3}} = 0$, then find the value of $(x + y - z)^3 + 27xyz$.

A 0

B $-z^3$

C 1

D $x^3 + y^3 - z^3$

Answer: A

Explanation:

$$x^{\frac{1}{3}} + y^{\frac{1}{3}} - z^{\frac{1}{3}} = 0$$

$$x^{\frac{1}{3}} + y^{\frac{1}{3}} = z^{\frac{1}{3}}$$

Cubing both sides

$$(x^{\frac{1}{3}} + y^{\frac{1}{3}})^3 = (z^{\frac{1}{3}})^3$$

$$x + y + 3(x^{\frac{2}{3}}y^{\frac{1}{3}}) + 3(y^{\frac{2}{3}}x^{\frac{1}{3}}) + 3x^{\frac{1}{3}}y^{\frac{1}{3}}z^{\frac{1}{3}} = z$$

$$x + y - z + 3(x^{\frac{2}{3}}y^{\frac{1}{3}}) + 3(y^{\frac{2}{3}}x^{\frac{1}{3}}) + 3x^{\frac{1}{3}}y^{\frac{1}{3}}z^{\frac{1}{3}} = 0$$

$$x + y - z + 3(x^{\frac{2}{3}}y^{\frac{1}{3}}) + 3(y^{\frac{2}{3}}x^{\frac{1}{3}}) + 3x^{\frac{1}{3}}y^{\frac{1}{3}}z^{\frac{1}{3}} = 0$$

$$x + y - z + 3(x^{\frac{2}{3}}y^{\frac{1}{3}}) + 3(y^{\frac{2}{3}}x^{\frac{1}{3}}) + 3x^{\frac{1}{3}}y^{\frac{1}{3}}z^{\frac{1}{3}} = 0$$

$$x + y - z + 3(x^{\frac{2}{3}}y^{\frac{1}{3}}) + 3(y^{\frac{2}{3}}x^{\frac{1}{3}}) + 3x^{\frac{1}{3}}y^{\frac{1}{3}}z^{\frac{1}{3}} = 0$$

$$x + y - z = -3(x^{\frac{2}{3}}y^{\frac{1}{3}}) - 3(y^{\frac{2}{3}}x^{\frac{1}{3}}) - 3x^{\frac{1}{3}}y^{\frac{1}{3}}z^{\frac{1}{3}}$$

cubing both sides

$$(x + y - z)^3 + 27xyz = 0$$

Question 38

The mass of an object is the measure of its-

A Volume

B Density

C Inertia

D Force

Answer: C

Question 39

The ability of metals to be drawn into thin metal is known as-

A Sonorous

B Ductility

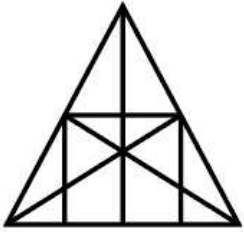
C Conductivity

D Malleability

Answer: D

Question 40

How many straight lines are there in the given figure?



A 13

B 10

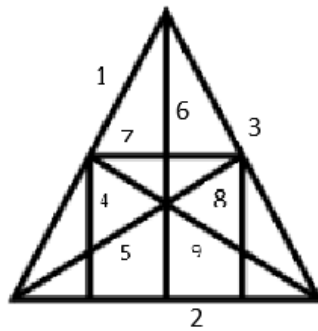
C 15

D 9

Answer: D

Explanation:

ans=9



Question 41

Which country hosted the 2018 Track Asia Cup cycling tournament?

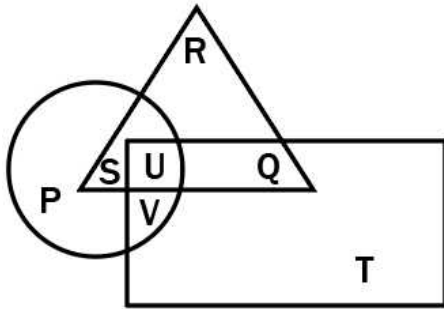
A Nepal

- B Japan
- C India
- D China

Answer: C

Question 42

In the given figure, the circle represents vehicle, triangle represents four wheeler, and rectangle represents car. Which region represents car and four wheeler but not vehicle?



- A V
- B Q
- C S
- D U

Answer: B

Question 43

In the process of rainbow formation in the sky, every raindrop in the atmosphere acts like-

- A Glass prism
- B Mirror
- C Glass slab
- D Lens

Answer: A

Question 44

Which of the following countries offers the cheapest mobile data in the world ?

- A England
- B India
- C USA(United States of America)
- D Australia

Answer: B

Question 45

In which of the following is synovial fluid found?

- A Fixed joint
- B Cartilaginous joint
- C Fibrous joint
- D Freely movable joint

Answer: D

Question 46

With which of the following is Vijay Hazare Trophy associated?

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

Answer: C

Question 47

Which of the following CORRECTLY describes AGNI?

- A A long-range missile
- B A long-range gun
- C A versatile tank
- D A fighter plane

Answer: A

Question 48

Hormones are normally absent in-

- A Monkeys
- B Bacteria
- C Rats
- D Cats

Answer: B

Question 49

What is the unit of calorific value of a fuel?

- A MJ/mg K
- B kW/mg
- C J/kg K
- D kJ/kg

Answer: D

Question 50

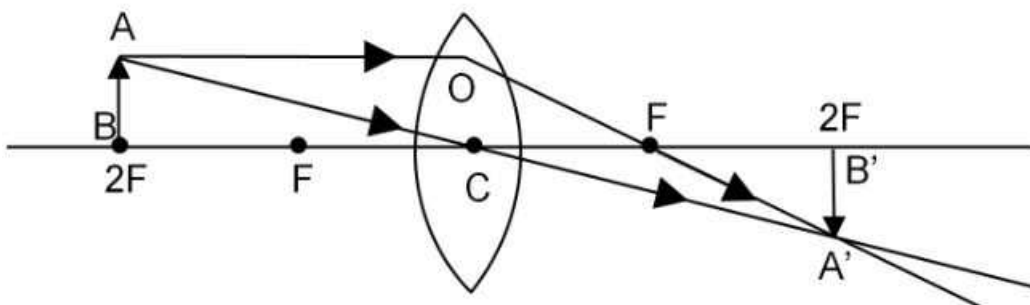
To obtain the same size image at $2F_2$ after refraction by a convex lens where should the object be placed?

- A Between focus F_1 and optic centre O
- B At $2F_1$
- C At infinity
- D Beyond $2F_1$

Answer: B

Explanation:

When the object is placed at the centre of curvature of a lens then a ray of light AO which is parallel to the principal axis after refraction pass through the focus F along the direction OF . While the other ray AC pass through the opticl centre C and goes straight without any deviation. These two refracted light rays intersect each other at point A' , on the other side of the lens at the centre of curvature $2F$. so, the image $A'B'$ formed in this case is at the centre of curvature, of same size as the object, real and inverted.



Question 51

If $A + B = 90^\circ$, then find $\frac{\sqrt{\tan A \tan B + \tan A \cot B}}{\sin A \sec B}$.

- A $\sec A$
- B $\tan^2 A$
- C $\sec^2 A$
- D $\tan A$

Answer: A

Explanation:

$$A+B=90$$

$$B=90-A$$

$$\frac{\sqrt{\tan A \tan B + \tan A \cot B}}{\sin A \sec B}$$

$$\frac{\sqrt{\tan A \tan(90-A) + \tan A \cot(90-A)}}{\sin A \sec(90-A)}$$

$$\frac{\sqrt{\tan A \cot(A) + \tan A \tan(A)}}{\sin A \operatorname{cosec}(A)}$$

(Since We know that $\tan(90-A) = \cot A$, $\sec(90-A) = \operatorname{cosec}(A)$, $\cot(90-A) = \tan A$)

$$\frac{\sqrt{\tan A \left\{ \frac{1}{\tan(A)} + \tan^2 A \right\}}}{\sin A \operatorname{cosec}(A)}$$

$$\frac{\sqrt{1 + \tan^2 A}}{\sin A \operatorname{cosec}(A)}$$

$$\frac{\sqrt{1 + \tan^2 A}}{\sin A \frac{1}{\sin A}}$$

$$\sqrt{1 + \tan^2 A}$$

$$\sqrt{\sec^2 A} \quad \{ 1 + \tan^2 A = \sec^2 A \}$$

$$\sec A$$

Question 52

Three times the square of a number decreased by 4 times the number is equal to 50 more than the number. Find the number.

A 10

B 6

C 4

D 5

Answer: D

Question 53

What is the SI unit of wave velocity?

A Second-s

B Metre per second- m s^{-1}

C Hertz-Hz

D Metre-m

Answer: B

Question 54

Which postulate of Dalton's atomic theory is the result of the law of conservation of mass?

A Atoms are indivisible particles, which cannot be created or destroyed in a chemical reaction

B All matter is made of very tiny particles called atoms, which participate in chemical reactions

C Atoms of a given element are identical in mass and chemical properties

D Atoms of different elements have different masses and chemical properties

Answer: A

Question 55

Potato is a-

- A Root
- B Stem
- C Bud
- D Fruit

Answer: B

Question 56

What will be the amount of Simple Interest on Rs.5000 at the rate of 5% per annum after 6 years?

- A Rs.800
- B Rs.1400
- C Rs.1500
- D Rs.1200

Answer: C

Question 57

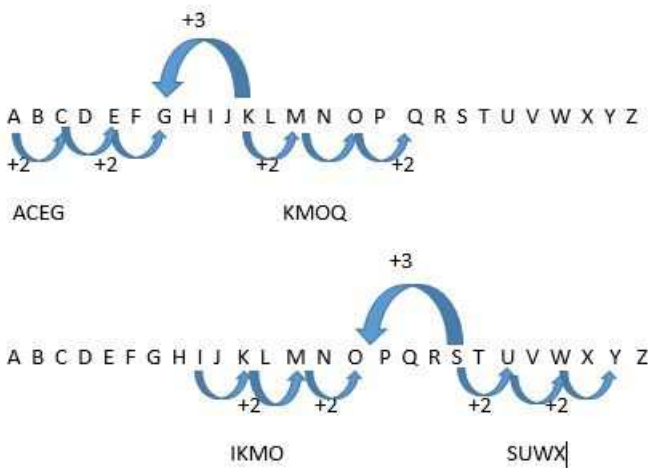
Which of the following will best complete the relationship given below?

ACEG : KMOQ :: IKMO : ?

- A SVWY
- B SUWY
- C STUV
- D SUWZ

Answer: B

Explanation:



Question 58

A boat travels a distance of 12 km. The first 4 km along the stream is covered in 15 minutes. The next 8 km is upstream. The downstream speed is twice the upstream speed. What is the average speed for the journey?

- A 10.4 km/h
- B 9.6 km/h
- C 10 km/h
- D 11.6 km/h

Answer: B

Explanation:

Let speed of boat = v and that of stream = u

Speed upstream = $v - u$

Speed downstream = $v + u$

As per question, $v + u = 2(v - u)$

$\Rightarrow v = 3u$

Now, $\text{time} = \frac{\text{distance}}{\text{speed}}$

$\frac{15}{60} = \frac{4}{v+u}$

$\frac{1}{4} = \frac{4}{3u+u}$

$\frac{1}{4} = \frac{1}{u}$

$u = 4 \text{ km/h}$

Then $v = 12 \text{ km/h}$

Time taken in upstream journey $= \frac{8}{(12 - 4)} = 1 \text{ h}$

Average speed = $\frac{\text{total distance}}{\text{total time}}$

Average speed = $\frac{12}{1+0.25}$

$= 9.6 \text{ km/h}$

Question 59

Agra is located on the banks of river-

- A Jhelum
- B Sutlej
- C Yamuna
- D Saraswati

Answer: C

Question 60

Four years ago, the ratio of the ages of A and B was 2 : 1. Four years hence, this ratio will become 3 : 2. What is the ratio of their present ages?

- A 5 : 2

B 5 : 3

C 2 : 5

D 5 : 4

Answer: B

Explanation:

Let their ages 4 years ago be a,b respectively.

4 years ago,

$$\frac{a}{b} = \frac{2}{1}$$

$$a = 2b \text{(1)}$$

4 years hence, means a+8,b+8

$$\frac{a+8}{b+8} = \frac{3}{2}$$

by cross multiplying.

$$2a + 16 = 3b + 24 \text{(2)}$$

solving above two equations for a and b, we get

$$a = 16$$

$$b = 8$$

so their present ages are

$$a+4 = 20$$

$$b+4 = 12$$

$$\frac{a}{b} = \frac{20}{12}$$

$$\frac{a}{b} = \frac{5}{3}$$

Question 61

If 'A' means '\$+\$', 'B' means '\$-\$', 'C' means '\$\times\$' and 'D' means '\$\div\$', then $81 \text{ D } 9 \text{ C } 5 \text{ D } 15 \text{ A } 8 \text{ B } 11 = ?$

A 0

B 12

C 0.15

D 22

Answer: A

Explanation:

$81 \text{ D } 9 \text{ C } 5 \text{ D } 15 \text{ A } 8 \text{ B } 11 = ?$

put given relation

$$81 \div 9 \times 5 \div 15 + 8 - 11$$

Using BODMAS rule we get,

$$= 3 + 8 - 11$$

$$= 0$$

Question 62

If $\frac{\cos \theta}{1 - \sin \theta} + \frac{\cos \theta}{1 + \sin \theta} = 4$, find the value of θ , where θ is acute.

- A 60°
- B 45°
- C 75°
- D 30°

Answer: A

Explanation:

$$\frac{\cos \theta}{1 - \sin \theta} + \frac{\cos \theta}{1 + \sin \theta} = 4$$

$$\frac{\cos \theta \times (1 + \sin \theta) + \cos \theta \times (1 - \sin \theta)}{(1 - \sin \theta)(1 + \sin \theta)} = 4$$

$$\frac{\cos \theta \times (1 + \sin \theta) + \cos \theta \times (1 - \sin \theta)}{\cos^2 \theta} = 4$$

$$\frac{(1 + \sin \theta) + (1 - \sin \theta)}{\cos \theta} = 4$$

$$\frac{2}{\cos \theta} = 4$$

$$\frac{2}{4} = \cos \theta$$

$$\frac{1}{2} = \cos \theta$$

$$\theta = 60^\circ$$

Question 63

Find the maximum number of children among whom 429 pencils and 715 pens can be equally distributed.

- A 143
- B 160
- C 120
- D 100

Answer: A

Explanation:

We need to find the highest common factor of both the numbers.

now

hcf of these two numbers is 143

so the number of students is 143

Question 64

Complete the series.

A, Z, C, X, E, V, G, (...)

- A T
- B W
- C M
- D N

Answer: A

Explanation:

The first, second letters are first and last letter in alphabetical order.

The third, fourth letters are third and last third letter in alphabetical order.

fifth, sixth letters are fifth and fifth letter from last in alphabetical order.

similarly seventh,eight letters are seventh and seventh letter from last in alphabetical order.

i.e T

Question 65

If in a certain language 'SALE' is coded as 'PAIE', how is 'CASUAL' coded in that code?

- A ZAUPXL
- B ZPAUXL
- C ZAPULX
- D ZAPUXL

Answer: D

Explanation:

SALE='PAIE',

Letter at Even position is same & odd position replaced by (letter-3)

'CASUAL' =ZAPUXL

Letter at Even position is same & odd position replaced by (letter-3)

Question 66

If in a certain language, 'oka peru' means 'fine cloth', 'meta lisa' means 'clear water' and 'dona lisa peru' means 'fine clear weather', what word in that language mean 'weather'?

- A meta
- B dona
- C oka
- D peru

Answer: B

Explanation:

'oka peru' means 'fine cloth', 'meta lisa' means 'clear water' and 'dona lisa peru' means 'fine clear weather'

from this when we look for the common codes, we get

fine=peru

clear=lisa

weather=dona

Question 67

A work is completed by P and Q working together 8 hours perday. Working 8 hours a day P alone will take 12 days to complete work, while working alone Q will take 10 days working 12 hours a day,to complete it. In how manydays did they complete the work together?

- A $\frac{1}{4}$ days
- B $\frac{2}{3}$ days
- C 7 days

D $6\frac{1}{2}$ days

Answer: B

Explanation:

P can complete the work in (12×8) hrs = 96 hrs

Q can complete the work in (10×12) hrs=120 hrs

Therefore, P's 1 hour work= $1/96$ and Q's 1 hour work= $1/120$

$(P+Q)$'s 1 hour's work $= (1/96) + (1/120) = 9/480$. So both P and Q will finish the work in $480/9$ hrs

Therefore, Number of days of 8 hours each = $(480/9) \times (1/8) = 60/9$

$6\frac{2}{3}$ days

Question 68

What do we do to reduce friction while playing carrom?

A Keep the board elevated in one side so that there is a slant

B Wipe the board with a smooth cloth

C Apply two or three oil drops on the board

D Sprinkle fine powder on the board

Answer: D

Question 69

A man takes twice as long to go upstream as to row downstream. What is the ratio of speed of boat in still water and the speed of stream?

A 4 : 1

B 2 : 1

C 3 : 2

D 3 : 1

Answer: D

Explanation:

Let speed of man upstream= x kmph & his speed downstream = 2x kmph

Hence the ratio will be , $\frac{2x+x}{2} : \frac{2x-x}{2}$

$$\frac{3x}{2} : \frac{x}{2}$$

$$\Rightarrow 3:1$$

Question 70

Find the ODD one out from the given options.

A GDA

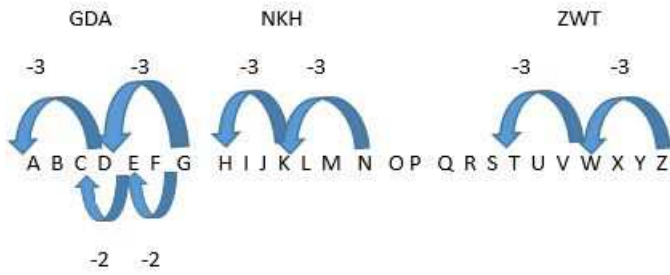
B GEC

C NKH

D ZWT

Answer: B

Explanation:



SO GEC odd one

Question 71

"Beat plastic pollution" is/was the theme of the 'World Environment Day' in the year-

A 2019

B 2016

C 2018

D 2015

Answer: C

Question 72

The incubation period of Typhoid bacillus causing typhoid fever is-

A 8 to 14 days

B 3 to 5 days

C 90 to 92 days

D 0 to 2 days

Answer: A

Question 73

If 'MISTAKE' is coded as 9765412 and 'DARKEN' is coded as 348120, how is 'KINDEST' coded?

A 1703265

B 1703625

C 1702356

D 1702365

Answer: A

Explanation:

M	I	S	T	A	K	E
9	7	6	5	4	1	2

D	A	R	K	E	N
3	4	8	1	2	0

KINDEST

K=1, I=7, N=0, D=3, E=2, S=6, T=5

170265

Question 74

Find the sum of first 12 even natural numbers.

A 156

B 112

C 108

D 126

Answer: A

Explanation:

step 1 Address the formula, input parameters & values.

Input parameters & values:

The number series 2, 4, 6, 8, 10, 12, , 24.

The first term $a = 2$

The common difference $d = 2$

Total number of terms $n = 12$

step 2 apply the input parameter values in the AP formula

$$Sum = \frac{n \times (a + T_n)}{2}$$

Where T_n = last term

$$Sum = \frac{12 \times (2 + 24)}{2}$$

$$Sum = \frac{12 \times (26)}{2}$$

$$Sum = \frac{312}{2}$$

$$Sum = 156$$

$$2 + 4 + 6 + 8 + 10 + 12 + + 24 = 156$$

Therefore, **156** is the sum of first 12 even numbers.

Question 75

Complete the series.

J, M, P, S, (...), (...)

A K, W

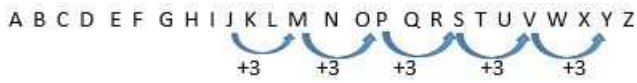
B Y, W

C Q, U

D V, Y

Answer: D

Explanation:



hence v,y

Question 76

If $72 \text{ km/h} = x \text{ m/s}$, then find the value of 'x'.

A 25

B 20

C 15

D 18

Answer: B

Explanation:

we know that

$$1 \text{ km/hr} = \frac{5}{18} \text{ m/sec}$$

given

$$72 \text{ km/h} = x \text{ m/s}$$

$$x \text{ m/s} = 72 \times \frac{5}{18} \text{ m/s}$$

$$x = 20$$

Question 77

Evaporation of material takes place-

A Above its melting point

B Above its boiling point

C Below its melting point

D Below its boiling point

Answer: D

Question 78

Which of these is the characteristic of sound which enables us to distinguish one sound from another having the same pitch and loudness?

A Time period

B Timber or quality of sound

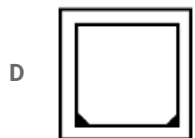
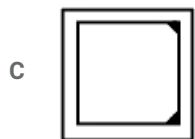
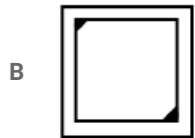
C Wave velocity

D Frequency

Answer: B

Question 79

Find the ODD one out from the given options.



Answer: B

Explanation:

B option is odd one because rectangular corner filled the color diagonally

Question 80

What is the molecular formula of butane?

A C_2H_6

B C_3H_8

C C_5H_{12}

D C_4H_{10}

Answer: D

Question 81

The isotope used to remove the brain tumours and treatment of cancer is-

A C-12

B Co-60

C Na-24

D U-235

Answer: B

Question 82

Which word will best complete the relationship given below?

Animal : Zoo :: Patient : ?

A Ship

B Hospital

C Water

D Mountain

Answer: B

Explanation:

Animal stay in ZOO similarly patient stay in hospital

so correct answer is Hospital

Question 83

Which part of human being grows at the rate of about half-an-inch per month?

A Hair

B Large intestine

C Ear

D Small intestine

Answer: A

Question 84

Which word will best complete the relationship given below?

Bharatnatyam : Tamil Nadu :: Kathak : ?

A Assam

B Manipur

C Uttar Pradesh

D Andhra Pradesh

Answer: C

Explanation:

Bharatnatyam : Tamil Nadu :: Kathak : Uttar Pradesh

Bharatnatyam originated in the state of Tamil Nadu

and Kathak originated in the state of Uttar pardesh

Question 85

Breaking of lead bromide into lead and bromine is an example of _____.

- A Decomposition reaction
- B Displacement reaction
- C Neutralisation reaction
- D Synthesis reaction

Answer: A

Question 86

Which dynasty built the famous Khajuraho temples in the 10th and 11th centuries?

- A Chandela
- B Chalukya
- C Pandya
- D Chola

Answer: A

Question 87

Why the stars are not visible in the daytime?

- A They are not visible because of the bright sunlight
- B Stars do not emit their own light during daytime
- C Stars move far away in daytime
- D Stars are hidden in daytime by the shadow of moon

Answer: A

Question 88

The ionisation potential of nitrogen is-

- A Less than that of oxygen
- B The same as that of oxygen
- C Greater than that of oxygen
- D Half that of oxygen

Answer: C

Question 89

PSLV-C42, launched by ISRO on 16 September 2018, was carrying how many observation satellites of UK?

- A Four
- B Three
- C One
- D Two

Answer: D

Question 90

Which Union Ministry is responsible for the issue of passports to citizens of India?

- A External Affairs
- B Information and Broadcasting
- C Defence
- D Home Affairs

Answer: A

Question 91

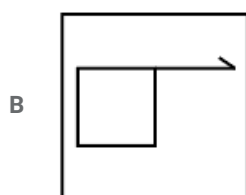
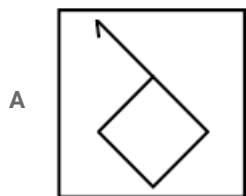
Which of the following gases evolved in a metal acid reaction?

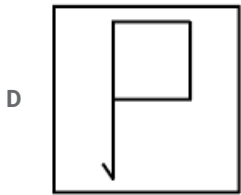
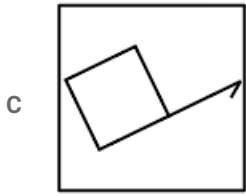
- A Oxygen
- B Depends upon acid
- C Hydrogen
- D No gas is evolved

Answer: C

Question 92

Find the ODD one out from the given options.



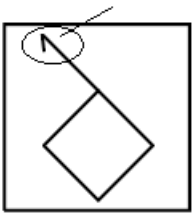


Answer: A

Explanation:

Option A is ODD one in other figure because direction of line symbol representing the arrow towards the box

Direction of line symbol representing the arrow towards the box



Question 93

Which of the following acids is commercially known as acetic acid?

- A Ethanoic acid
- B Butanoic acid
- C Propanoic acid
- D Methanoic acid

Answer: A

Question 94

What is the percentage form of the ratio 1 : 8?

- A 8%
- B 6.25%
- C 80%
- D 12.5%

Answer: D

Explanation:

percentage form of the ratio 1 : 8

$$\% = 100 \times \frac{1}{8} \%$$

$$= 12.5\%$$

Question 95

If 6 men and 8 boys can complete a work in 10 days and 26 men and 48 boys can do it in 2 days, then find the ratio of capacity of a man to that of a boy.

A 4 : 3

B 6 : 5

C 3 : 2

D 2 : 1

Answer: D

Explanation:

$10(6M + 8B) = 2(26M + 48B)$ since the same work is done they will be equal

$$60M + 80B = 52M + 96B$$

$$8M = 16B \text{ or } M = 2B$$

$$M:B=2:1$$

Question 96

By selling a transistor for Rs.572, a shopkeeper earns a profit equivalent to 30% of the cost price of the transistor. What is the cost price of the transistor?

A Rs.340

B Rs.440

C Rs.420

D Rs.400

Answer: B

Explanation:

Given the selling price of transistor which is Rs 572 and a man gains 30%

we have to find the cost price of transistor

Selling price, S.P=Rs 572

Gain percentage=30%

By formula

$$S.P = C.P \left[1 + \frac{\text{Gain \%}}{100} \right]$$

$$572 = C.P \left[1 + \frac{30}{100} \right]$$

$$572 = C.P \times 1.3$$

$$C.P = \frac{572}{1.3} = 440$$

Hence, the cost price is Rs 440

Question 97

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

Statements:

- 1) All bats are balls.
- 2) All balls are gloves.

Conclusions:

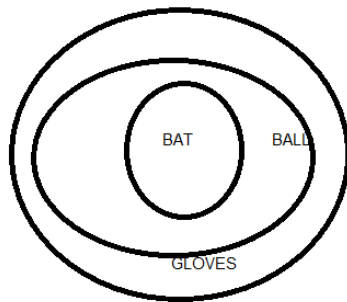
- I. Some gloves are bats.
- II. All bats are gloves.

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

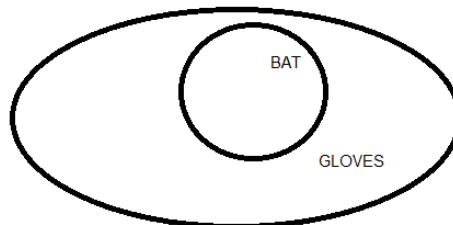
Answer: D

Explanation:

FINAL DIAGRAM



IT SHOWS THAT CONCLUSION 1 & 2 FOLLOW



Question 98

The exchange of respiratory gases in the lungs occur in-

- A Trachea
- B Bronchi
- C Alveoli
- D Bronchiole

Answer: C

Question 99

Methyl orange is-

- A Red in acidic medium, yellow in basic medium
- B Colourless in acidic medium, pink in basic medium
- C Pink in acidic medium, colourless in basic medium
- D Yellow in acidic medium, pink in basic medium

Answer: A

Question 100

Thrombosis is a disease of the-

- A Blood
- B Thyroid gland
- C Lungs
- D Nerve bursting

Answer: A