



RRB JE 2nd June 2019 Shift-3

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Instructions

For the following questions answer them individually

Question 1

If the midvalue of a class is 20 and the width of the class is 5, find the lower and upper limits of the class.

- A 17 - 23
- B 17 - 22
- C 17.5 - 22.5
- D 18 - 22

Answer: C

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Question 2

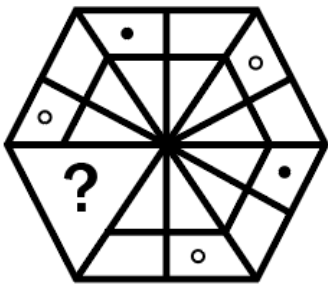
What is the definite path on which the planet revolves around the Sun, called as?

- A Ring
- B Orbit
- C Path
- D Axis

Answer: B

Question 3

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



C



D



Answer: C

Question 4

The male and female sex cells fuse to form a?

- A Gastrula
- B Zygote
- C Gamete
- D Blastula

Answer: B

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Question 5

Dialysis is used when a patient has serious trouble with?

- A Lungs
- B Kidneys
- C Liver
- D Heart

Answer: B

Question 6

What is blood?

- A A supporting tissue
- B A connective tissue
- C A packing tissue
- D A muscular tissue

Answer: B

Question 7

The medium required for transmission of sound should be in _____ state.

- A Solid
- B Gas
- C Liquid
- D All of the options



Answer: D

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Question 8

The angle of elevation of the top of a chimney from the top of a tower is 60° and the angle of depression of foot of the chimney from the top of the tower is 30° . If the height of the tower is 40 m, then find the height of the chimney.

- A 160 m
- B 220 m
- C 175 m
- D 192 m

Answer: A

Question 9

Simplify: $10 \times 4 - 2 \times (4^2 \div 4) \div 2 \left(\frac{1}{2}\right) + 9$

- A 41
- B 35
- C 40
- D 31

Answer: A

Question 10

Which of the following statements is TRUE about acids?

- A Sour and change blue litmus to red
- B Bitter and change blue litmus to red
- C Sour and change red litmus to blue
- D Bitter and change red litmus to blue

Answer: A

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Question 11

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

Statements:

- 1) All windows are doors.
- 2) All doors are walls.

Conclusions:

- I. All windows are walls.
- II. Some doors are windows.

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

Answer: B

Question 12

The capacity of a cylindrical tank is 3080 m^3 . If the radius of its base is 7 m, find the depth of the tank.

- A 15 m
- B 10 m
- C 25 m
- D 20 m

Answer: D

Question 13

Find the number of carpets required to spread along the floor of a room of dimensions $40\text{ m} \times 24\text{ m}$, if each carpet measures $6\text{ m} \times 4\text{ m}$.

- A 15
- B 12
- C 40
- D 18

Answer: C

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Question 14

To which dynasty did Ashoka belong?

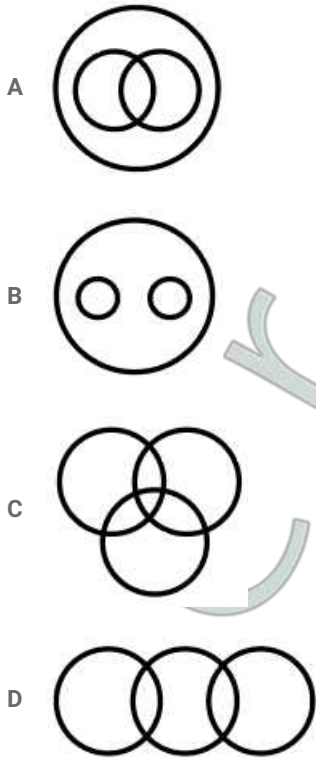
- A Gupta
- B Maurya
- C Kanva

D Nanda

Answer: B

Question 15

Choose the figure that best represents the relationship among the classes given below.
Adult, Singer, Children



Answer: D

Question 16

In a certain code language, 123 means 'hot filtered coffee'; 356 means 'very hot day' and 589 means 'day and night'. Which digit stands for 'very'?

- A 9
- B 5
- C 8
- D 6

Answer: D

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Question 17

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

6	9	7
3	5	2
10	7	?
30	28	25

A 4

B 5

C 6

D 3

Answer: B

Question 18

The sum of two numbers is 232. Their HCF is 29. Which of these pairs give the possible values of the numbers?

A 55, 177

B 22, 137

C 58, 174

D 29, 203

Answer: D

Question 19

Which of the following is an 'Air to Air Missile'?

A Akash

B Maitri

C Astra

D Trishul

Answer: C

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Question 20

Electronegativity is the measure of the capacity of an atom to?

A Repel protons

B Attract electrons

C Repel electrons

D Attract protons

Answer: B

Question 21

The modern periodic table has vertical columns known as?

A Columns

B Periods

C Table

D Groups

Answer: D

Question 22

Value of $\frac{0.33}{0.22} \times \frac{0.1667 \times 0.8333}{0.6667 \times 0.1250}$ is nearly equal to:

A 2.5

B 1.5

C 3

D 2

Answer: A

Explanation:

$$\frac{0.33}{0.22} \times \frac{0.1667 \times 0.8333}{0.6667 \times 0.1250}$$

$$\Rightarrow \frac{33}{22} \times \frac{1667 \times 8333}{6667 \times 1250} = 2.5$$

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Question 23

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

Statements:

- 1) All cows are crows.
- 2) Some elephants are crows.

Conclusions:

- I. All cows are elephants.
- II. Some elephants are cows.

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

Question 24

Which of the following countries was the first to launch the world's first fully-fledged 5G mobile networks in 2019?

- A Japan
- B USA
- C South Korea
- D North Korea

Answer: C

Question 25

Find the equation whose roots are $(a + \sqrt{b})$ and $(a - \sqrt{b})$

- A $x^2 + 2ax - (a^2 - b) = 0$
- B $x^2 - ax + a^2 - b^2 = 0$
- C $x^2 - 2ax + (a^2 - b) = 0$
- D $x^2 + ax + a^2 - b^2 = 0$

Answer: C

Explanation:

By option C,

$$x^2 - 2ax + (a^2 - b) = 0$$

$$\Rightarrow x^2 - (a + \sqrt{b})x - (a - \sqrt{b})x + (a^2 - b) = 0$$

$$\Rightarrow x(x - (a + \sqrt{b})) - (a - \sqrt{b})(x - (a + \sqrt{b})) = 0$$

$$\Rightarrow (x - (a + \sqrt{b}))(x - (a + \sqrt{b})) = 0$$

$$\Rightarrow x = (a + \sqrt{b}) \text{ or } x = (a - \sqrt{b})$$

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Question 26

A person is said to be anemic if his body has deficiency of -

- A White Blood Corpuscles
- B Red Blood Corpuscles
- C Calcium and phosphorous
- D Vitamins

Answer: B

Question 27

Toxicology is related to the study of?

- A Diseases

- B Bacteria
- C Poisons
- D Viruses

Answer: C

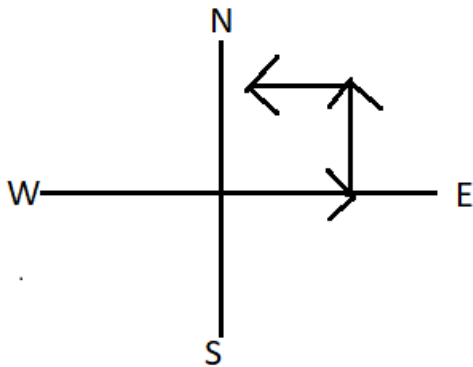
Question 28

One day morning, a girl was walking towards sun and then she turned left. Again she took left turn. Which direction was she facing now?

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

Answer: C

Explanation:



first she walks towards east after that take a left turn and walk towards north again a take a left turn and walk towards west

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Question 29

Choose the number that is divisible by 11.

- A 1341
- B 3178
- C 325182
- D 16461

Answer: C

Explanation:

According to the divisibility rule of 11, we must subtract and then add the digits in an alternating pattern from left to right . If the answer is 0 or 11 then the result is divisible by 11.

here the number is 325182

$$3 + 5 + 8 = 16$$

$$2 + 1 + 2 = 5$$

$$16 - 5 = 11$$

thus number is divisible by 11

Question 30

Walking at 4 mph, a person covers a certain distance in a given time. If he increases his speed to 9 mph, he covers 7.5 miles more in the same time. How much distance does he cover originally?

- A 7.5 miles
- B 5 miles
- C 6 miles
- D 6.5 miles

Answer: C

Explanation:

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

Walking at 4 mph, a person covers a certain distance in a given time.

let the distance be d and time t

$$4\text{mph} = \frac{d}{t} \dots\dots\dots(1)$$

If he increases his speed to 9 mph, he covers 7.5 miles more in the same time

$$9\text{mph} = \frac{d+7.5}{t} \dots\dots\dots(2)$$

from (1) and (2)

$$\frac{d}{4} = \frac{d+7.5}{9}$$

solving $d = \frac{30}{5} = 6\text{miles}$

Question 31

The first attempt to classify elements was made by?

- A Dobereiner
- B Newland
- C Meyer
- D Mendeleev

Answer: A

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Question 32

Two numbers in the ratio 15 : 11 have their HCF to be 13. What is their LCM?

- A 27885
- B 2145
- C 4290
- D 165

Answer: B

Explanation:

let the two numbers be $15x$ and $11x$

hence $HCF = x = 13$

two numbers are $15 \times 13 = 195$

$11 \times 13 = 143$

product of two numbers equal to the product of the HCF and LCM

$195 \times 143 = 13 \times LCM$

solving, $LCM = \frac{195 \times 143}{13} = 2145$

Question 33

Which force is exerted by air on objects moving through it?

- A Force of gravity
- B Magnetic force
- C Electrostatic force
- D Frictional force

Answer: D

Question 34

Which of the following is a good conductor of electricity?

- A Phosphorous
- B Sulphur
- C Copper
- D Nitrogen

Answer: C

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Question 35

Find the ODD one out from the given options.

- A BO
- B ES
- C CP
- D DQ

Answer: B

Question 36

Alkalis turn universal indicators?

- A Green
- B Yellow
- C Blue
- D Red

Answer: C

Question 37

A boat takes 12 hours to go downstream and 24 hours to return while covering a certain distance. What is the time taken by the boat to cover the same distance in still water?

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

Answer: A

Explanation:

if t_1 and t_2 are the upstream and downstream times. Then time taken in still water is given by

$$\frac{2 \times t_1 \times t_2}{t_1 + t_2} = \frac{2 \times 12 \times 24}{36} = 16 \text{ hrs}$$

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Question 38

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

2	4	3
3	6	8
6	7	5
20	46	?

- A 45
- B 48
- C 40
- D 43

Answer: D

Question 39

Compound Interest and Simple Interest on a certain sum of money for 2 years is Rs.282.15 and Rs.270 respectively. The rate of interest is:

- A $6\frac{2}{3}\%$

B 11%

C 9%

D $\frac{1}{83}\%$

Answer: C

Explanation:

CI for 2 years = Rs 282.15

SI for 2 years = Rs 270

SI for 1 year = $\frac{270}{2} = 135$

difference between SI and CI = $282.15 - 270 = 12.15$ Rs

rate% = $\frac{12.15}{135} \times 100 = 9\%$

for 1st year CI and SI will be same

Question 40

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

Eight persons—L, M, N, O, P, Q, R and S are sitting around a circular table facing the center but not necessarily in the same order. Each one of them holds a different post—Manager, Secretary, Chairman, President, Vice President, Group Leader, Financial Advisor and Managing Director. L sits third to the right of the Managing Director, and only two people sit between the Managing Director and S. The Vice President and the Secretary are immediate neighbours. Neither L nor S is a Vice President or a Secretary. The Vice President is not an immediate neighbour of the Managing Director. The Manager sits second to the left of P. P is not an immediate neighbour of S. The Manager is an immediate neighbour of both the Group Leader and the Financial Advisor. The Financial Advisor sits third to the right of M. M is not the Vice President. N sits to the immediate right of the Chairman. L is not the Chairman. Q is not an immediate neighbour of L. R is not an immediate neighbour of the Manager.

Which of the following posts is held by M in the company?

A Manager

B Secretary

C Chairman

D Managing Director

Answer: B

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Question 41

Comprehensive Environmental Pollution Index (CEPI) is an index value which characterises?

A Quality of the food products

B Quality of the minerals

C Quality of the fruits

D Quality of the environment

Answer: D

Question 42

Find the difference between the Simple Interest and Compound Interest on Rs.10000 for 3 years at the rate of 3% per annum.

- A Rs.27.27
- B Rs.17.82
- C Rs.21.54
- D Rs.16.25

Answer: A

Explanation:

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

$$CI = P(1 + \frac{r}{100})^n$$

$$P = 10000$$

$$N = 3 \text{ years}$$

$$R = 3\%$$

$$SI = \frac{10000 \times 3 \times 3}{100} = 900$$

$$CI = 10000(1 + \frac{3}{100})^3$$
$$= 927.27$$

$$CI - SI = 927.27 - 900 = 27.27$$

Question 43

What is the state animal of Andhra Pradesh?

- A Black buck
- B Sambar
- C Rhinoceros
- D Elephant

Answer: A

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Question 44

Which device present in the hearing aid receives the sound?

- A Microphone
- B Amplifier
- C Sound actuator
- D Speaker

Answer: A

Question 45

If '+' means 'x', '-' means '÷', 'x' means '+' and '÷' means '-', then $42 - 6 \times 7 + 8 \div 9 - 3 = ?$

Latek

- A 66

- B 19
- C 60
- D 70

Answer: C

Explanation:

$$42 \div 6 + 7 \times 8 - 9 \div 3$$

$$7 + 7 \times 8 - 3$$

$$7 + 56 - 3$$

$$63 - 3 = 60$$

Question 46

Find the value of $\cos 20^\circ \cos 35^\circ \cos 45^\circ \cos 55^\circ \cos 70^\circ$ is?

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

Answer: D

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Question 47

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

Twelve people are sitting in two parallel rows containing six people each, in such a way that there is an equal distance between adjacent persons. In row-1, G, H, I, J, K and L are seated, and all of them are facing south. In row-2, U, V, W, X, Y and Z are seated, and all of them are facing north. Therefore, in the given seating arrangement each member seated in a row faces another member of the other row. U sits third to the right of X. Neither U nor X sits at the extreme ends. K faces X. L does not face U, and L does not sit at any of the extreme ends. L is not an immediate neighbour of K. V sits at one of the extreme ends. Only two people sit between V and Y. Y does not face L. Two persons sit between I and H. I is not an immediate neighbour of K. W does not face L. G is not an immediate neighbour of I.

G is related to L in the same way as W is related to Z. Y is related to who among the following in the same pattern?

- A U
- B Z
- C V
- D X

Answer: C

Question 48

In a certain code, 'kemp lamp tems' means 'speak the truth', 'bis tim nak' means 'always seek knowledge', 'tim tems sik' means 'knowledge is truth' and 'lik bis zap' means 'never seek violence'. Which of the following stands for 'always'?

- A tim
- B zap
- C bis
- D nak

Answer: D

Explanation:

'kemp lamp tems' means 'speak the truth'.....(1)
 'bis tim nak' means 'always seek knowledge'.....(2)
 'tim tems sik' means 'knowledge is truth'.....(3)
 'lik bis zap' means 'never seek violence'.....(4)
 from (1) and (2) tems = truth
 from (2) and (3) tim = knowledge
 from (2) and (4) bis = seek
 thus we get nak = always from (2)

Question 49

What percentage of 5% is 3%?

- A 50%
- B 15%
- C 30%
- D 60%

Answer: D

Explanation:

let the % be x

$$\frac{x}{100} \times \frac{5}{100} = \frac{3}{100}$$

$$x = \frac{3 \times 100 \times 100}{100 \times 5} = 60\%$$

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Question 50

Two pipes can fill a tank in 5 and 6 hours respectively. A third pipe will empty it in 12 hours. If all the pipes are opened, then find the time taken to either fill or empty the tank.

- A Filled in 30/17 hours
- B Filled in 60/17 hours
- C Filled in 30/11 hours
- D Emptied in 9/2 hours

Answer: B

Explanation:

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

P1,P2 and P3 be the pipes

P1 fill the tank in 5 hrs

P2 fill the tank in 6 hrs

P3 empty the tank in 12 hrs

work done = LCM of P1,P2 and P3 = LCM (5,6,12) = 60

$$\text{efficiency of P1} = \frac{60}{5} = 12$$

$$\text{efficiency of P2} = \frac{60}{6} = 10$$

$$\text{efficiency of P3} = \frac{60}{12} = 5$$

$$\text{efficiency of P1 + P2 + P3} = 12 + 10 - 5 = 17$$

$$60 = 17 \times \text{time}$$

$$\text{time} = \frac{60}{17} \text{ hrs}$$

Question 51

Find the ODD one out from the given options.

- A EUFV
- B APBQ
- C GWHX
- D LMNO

Answer: D

Question 52

If $[x + px^3 + qx^2 + rx + s]$ is divisible by $(x^2 - 1)$, $(x - 2)$ and $(x - 3)$, values of p and s are respectively:

- A 5, -6
- B -5, 6
- C -5, -5
- D -5, -6

Answer: D

Explanation:

$[x + px^3 + qx^2 + rx + s]$ is divisible by $(x^2 - 1)$, $(x - 2)$ and $(x - 3)$

That means for $x=1,-1,2,3$,

we have four values of the equation:-

1. $1 + p + q + r + s = 0$
2. $-1 - p + q - r + s = 0$
3. $2 + 8p + 4q + 2r + s = 0$
4. $3 + 27p + 9q + 3r + s = 0$

Solving the four equations with four unknowns we get, $p = -5$, $s = -6$

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Question 53

The maximum number of electrons present in a shell is given by the formula?

- A n
- B $2n^2$
- C $2n$
- D $2n + 1$

Answer: B

Explanation:

It is $2n^2$, where n represents no. of electrons in the outer shell. Suppose it is K-shell, the no is $2 * 1^2 = 2$

Question 54

A man bought apples at the rate of 8 apples for Rs.34 and sold them at the rate of 12 apples for Rs.57. How many apples should be sold to earn a net profit of Rs.45?

- A 90
- B 150
- C 135
- D 100

Answer: A

Explanation:

CP of 1 apple =Rs. $34/8$

SP of 1 apple = Rs. $57/12$

Profit for 1 apple =Rs. $(57/12-34/8) =\text{Re. } 1/2$

So to have a profit of Re 0.50 we need 1 apple.

To have a profit of Rs 45, we need 90 apples.

Question 55

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

- 9(541)6
- 7(633)9
- 4(???)8

- A 123
- B 321
- C 312
- D 213

Answer: B

Explanation:

Here two things are taking care of . First is ordering is always from bigger to smaller inside the bracket and only one option is showing that. And the sum of the numbers outside the brackets are multiple of the numbers of the inside of the brackets.

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Question 56

With which sport is Roger Federer associated?

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

Answer: A

Question 57

Lipids are formed when glycerol combines with?

- A Peptide
- B Disaccharide
- C Fatty acids
- D Oligosaccharide

Answer: C

Question 58

What is the ratio of selling price to the cost price of an article, if there is a profit of 12%?

- A 14 : 10
- B 12 : 5
- C 32 : 25
- D 28 : 25

Answer: D

Explanation:

Let us assume C.P. = 100

Therefore S.P. = 112

Hence Ratio of SP to CP = 100

$\frac{112}{100}$ i.e 28:25

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Question 59

Express 603% as a decimal.

- A 6.03
- B 0.0603

C 60.3

D 0.603

Answer: A

Explanation:

603%

$\frac{603}{100}$

=6.03

Question 60

What is the chemical name of CaO?

A Calcium dioxide

B Calcium sulphate

C Calcium monoxide

D Calcium oxide

Answer: D

Question 61

Banwarilal Purohit is the present Governor of?

A Assam

B Tamil Nadu

C Maharashtra

D Karnataka

Answer: B

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Question 62

Find the smallest fraction.

A $\frac{15}{19}$

B $\frac{7}{8}$

C $\frac{13}{6}$

D $\frac{17}{21}$

Answer: A

Explanation:

B and C are out of the question at first glance.

B is greater than 50 percent and C is greater than 2.

Remaining are A and D.

D is $\frac{17}{21}$ which is equal to 0.80

whereas A is equal to 0.78.

Hence is the smallest fraction

Question 63

Olympic bronze medallist _____ has been appointed as the new Brand Ambassador of Bharat Sanchar Nigam Ltd (BSNL) since September 2018.

- A Saina Nehwal
- B P.V. Sindhu
- C Neeraj Chopra
- D Mary Kom

Answer: D

Question 64

If 'ADVENTURE' is coded as 'ERUTNEVDA', how is 'GREEN' coded?

- A NEEGR
- B GEREN
- C NEERG
- D ENEGR

Answer: C

Explanation:

ADVENTURE is written backwards i.e. ERUTNEVDA

Therefore GREEN is coded as NEERG

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Question 65

Present ages of P and Q are in the ratio 6 : 7. Q is 4 years elder to P. What is the ratio of their ages after 4 years?

- A 7 : 9
- B 5 : 8
- C 8 : 3
- D 7 : 8

Answer: D

Explanation:

Let ,P= 6X and Q= 7X.

According to the problem,

$$7X - 6X = 4$$

Therefore X=4

$P=24$ and $Q=28$

After 4 years, $P = 28$ and $Q = 32$

Ratio = $28:32 = 7:8$

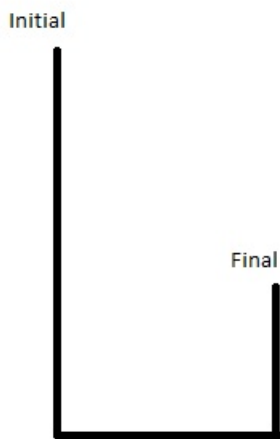
Question 66

Sai walks 550 m towards south direction and he then took left and walked 200 m. Again he took left and walked 200 m. Which direction is he now from the starting point?

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

Answer: A

Explanation:



As per the figure, he is now south east from starting point

Question 67

Find the ODD one out from the given options.

- A 43
- B 53
- C 63
- D 73

Answer: C

Explanation:

All are prime numbers except 63.

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Question 68

Complete the series.

JE, OJ, SO, VT, (...)

- A RT
- B XY
- C AD
- D LG

Answer: B

Explanation:

First of all, see the pattern

JE, OJ, SO, VT

The second alphabet of every element is increasing by 5.

Check $E + 5 = J$, $J + 5 = O$, $O + 5 = T$, and consequently $T + 5 = Y$

The first alphabet is increasing with decreasing order from 5.

$J + 5 = O$, $O + 4 = S$, $S + 3 = V$ and consequently, $V + 2 = X$

So the element becomes XY.

Question 69

Find the ODD one out from the given options.

- A 325
- B 145
- C 280
- D 226

Answer: C

Explanation:

$325 = \text{square of } 18 \text{ plus } 1$

$145 = \text{square of } 12 \text{ plus } 1$

$226 = \text{square of } 15 \text{ plus } 1$

but with 280 not any similar pattern

Question 70

'Uthagamandalam' is the other name of which of these hill stations?

- A Darjeeling
- B Kodaikanal
- C Nainital
- D Ooty

Answer: D

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Question 71

In a family, the father's age is 5 times the age of one of his sons. Mother's age is 4 times the age of their other son. Difference in the parents' ages is half the sum of the sons' ages. Then:

- A They are twins
- B The sum of their ages is a multiple of 5
- C The difference in their ages is 5
- D One son is twice as old as the other

Answer: A

Explanation:

Let , Child 1's age is X and Child 2's age is Y.

And let us assume Father's age is F and Mother's age is M.

From the statements,

$$F=5X.....(i) \text{ and } M= 4Y...(ii)$$

$$\text{Again, } F + M =5X + 4Y...(iii)$$

$$\text{Again, } F - M = (X + Y)/2...(iv)$$

Adding (iii) and (iv) and then replacing F of (i),

$$\text{we get } 9X/4=9Y/4$$

Hence it is proved that , X = Y. Hence twins.

Question 72

Through which national park does the Ramganga River run?

- A Kaziranga
- B Corbett
- C Ranthambhore
- D Periyar

Answer: B

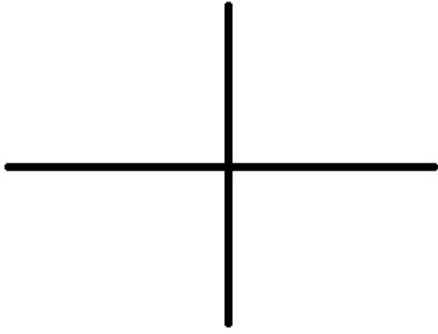
Question 73

A man stands 10 m in front of a large plane mirror. How far must he walk before he is 5 m away from his image?

- A 7.5 m
- B 5 m
- C 4 m
- D 2.5 m

Answer: A

Explanation:



If a person is 10 m from the mirror, then the image is formed 10 m from the mirror backwards, then the image is 20 m from the man. If the image has to be formed 5 m from the mirror, then the man is actually $5/2$ i.e. 2.5 m from the mirror. So to cover the full distance of 10 m, he has to cover a remaining distance of 7.5 m

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Question 74

Evaluate: $(\sqrt{3} - \frac{1}{\sqrt{3}})^2$

A $2\sqrt{3}$

B $\frac{3}{4}$

C $\frac{4}{\sqrt{3}}$

D $\frac{4}{3}$

Answer: D

Explanation:

The correct option is D.

$$\left(\sqrt{3} - \frac{1}{\sqrt{3}}\right)^2$$

$$= \left(\frac{3-1}{\sqrt{3}}\right)^2$$

$$= \left(\frac{2}{\sqrt{3}}\right)^2$$

After squaring

$$= \left(\frac{4}{3}\right)$$

Question 75

The ratio of the number of boys and girls in a school is 3 : 2. If 20% of the boys and 25% of the girls are scholarship holders, what percentage of the students do NOT get scholarship?

A 70%

B 78%

C 56%

D 80%

Answer: B

Explanation:

Lets assume , no of boys are $3x$ and no. of girls are $2x$.

Now , no of boys who are holders are 20 percent of $3x$ i.e. $\frac{20}{100} \times 3x$ i.e $0.6x$

Now , no of girls who are scholarship holders are 25 percent of $2x$ i.e. $\frac{25}{100} \times 2x$ i.e $0.5x$

Therefore total scholarship holders are $0.6x + 0.5x$ i.e. $1.1x$

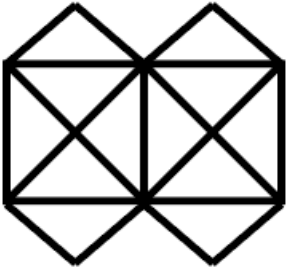
Total students = $3x + 2x = 5x$

Therefore students who don't get scholarships $5x - 1.1x = 3.9x$

Therefore Percentage of students who have no scholarships = $\frac{3.9x}{5x} * 100 = 78$ percentage

Question 76

How many straight lines are there in the given figure?



A 15

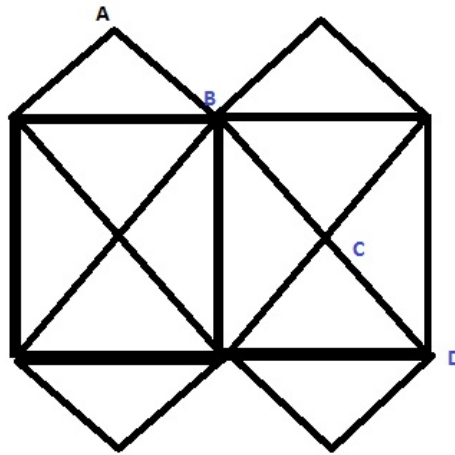
B 13

C 11

D 21

Answer: B

Explanation:



Check the number of actual straight lines.

Though it seems there are too many straight lines but in reality there are few. Check for the straight line ABCD, the straight line will be AD not AB or BC or BD or CA . The reason is simple, we are taking the straight lines that are making up the full straight line from one end to other, not in between.

Check the number of actual straight lines here.

Though it seems there are too many straight lines but in reality there are few. Check for the straight line ABCD, the straight line will be AD not AB or BC or BD or CA . The reason is simple, we are taking the straight lines that are making up the full straight line from one end to other, not in between.

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Question 77

In which of these sports is a helmet worn?

- A Kabaddi
- B Basketball
- C Volleyball
- D Hockey

Answer: D

Question 78

What is the formula for the refractive index of the medium, n_m ?

- A The ratio of speed of light in medium to speed of light in air
- B The ratio of speed of light in air to the speed of light in medium

- C The sum of the speed of light in air and the speed of light in medium
- D The product of speed of light in air and speed of light in medium

Answer: B

Question 79

When a positive number is decreased by 4, it is equal to 21 times the reciprocal of the number. Find the number.

- A 9
- B 4
- C 7
- D 5

Answer: C

Explanation:

The correct answer is 7.

Let us suppose the positive number is x.

According to the question,

1. When a positive number is decreased by 4, the number becomes $x-4$

2. 21 multiplied by reciprocal of that number becomes $\frac{21}{x}$

By the problem,

$$x-4 = \frac{21}{x}$$

$$x^2 - 4x - 21 = 0$$

$$x^2 - 7x + 3x - 21 = 0$$

$$(x - 7)(x + 3) = 0$$

therefore $x = 7$ or $x = -3$. Since x is a positive integer, therefore x is 7

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Question 80

Complete the series.

X, U, R, O, L, (...)

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

Answer: C

Explanation:

The correct answer is the letter I.

If you clearly notice the pattern is as follow:

$$X - 3 = U$$

$$U - 3 = R$$

R - 3 = O

O - 3 = L

And therefore L - 3 = I, i.e every time 3 letters are decreasing to form the next letter.

Question 81

Who is the present Chairman of Central Board of Direct Taxes?

- A Sushil Chandra
- B Akilesh Ranjan
- C Aditya Vikram
- D P.C. Mody

Answer: D

Question 82

The reciprocal of equivalent resistance connected in parallel is the _____ of reciprocal of individual resistances.

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

Answer: C

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Question 83

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

XJ : VO :: HT : ?

- A GY
- B GX
- C FY
- D FX

Answer: C

Explanation:

First letter of the **first group** is moved **2 steps backward** to obtain corresponding letter of the second group

Second letter of the **first group** is moved **5 steps forward** to obtain corresponding letter of the second group

A similar relationship will exist between third and fourth groups

XJ : VO :: HT : FY

Question 84

Pulse beat is measured from?

- A Capillary
- B Artery
- C Vein
- D Nerve

Answer: B

Question 85

Which disease is treated by insulin?

- A Tuberculosis
- B Cancer
- C Anaemia
- D Diabetes

Answer: D

RRB Group-D Previous Papers

Question 86

Pituitary gland, one of the most important glands of our body, is located?

- A Near the lower end of the backbone
- B Inside the chest
- C Inside the stomach
- D Inside the skull

Answer: D

Question 87

Two pipes P and Q can individually fill a tank in 60 minutes and 40 minutes. If pipe Q alone is open for the first half an hour and then pipe P is also turned on, in how many minutes more will the tank get filled up?

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

Answer: C

Explanation:

Work = efficiency \times time

Work = LCM(60,40)

= 120

Quantity filled by P in 1 hr = $\frac{120}{60}$

$$= 2$$

$$\text{Quantity filled by Q in 1 hr} = \frac{120}{40}$$

$$= 3$$

Efficiency of pipe P = 2

Efficiency of pipe Q = 3

Work done by pipe Q alone for the first half an hour = 30×3

$$= 90$$

Work done by pipe P and Q for the remaining time $t = t \times (2 + 3)$

$$= t \times 5$$

Thus total work done,

$$90 + 5 \times t = 120$$

Solving, $t=6$ minutes

Question 88

Mark the right statements.

1. The lateral surfaces of a pyramid are triangles with a common vertex.
2. A pyramid is a special case of a prism.
3. Volume of a pyramid = $\frac{1}{3}$ x base area x vertical height
4. Volume of a prism = $\frac{1}{2}$ base area x height

- A Statement 1 only
- B Statements 1, 3 and 4 only
- C Statements 1, 2 and 3 only
- D Statements 1 and 3 only

Answer: D

Explanation:

Pyramid: A geometric solid with one base that is a polygon and all other faces are triangles with a common vertex.

Prism: A geometric solid with two bases that are congruent, parallel polygons and all other faces are parallelograms. It is referred to as a right **prism** if the faces are rectangles.

Volume of a pyramid = $\frac{1}{3}$ x base area x vertical height

Volume of a prism = base area x vertical height

1 and 3 are the correct statements

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Question 89

Which product is obtained when coal is subjected to destructive distillation that is heating strongly in the absence of air?

- A Coke
- B Petrol
- C Diesel
- D Kerosene

Answer: A

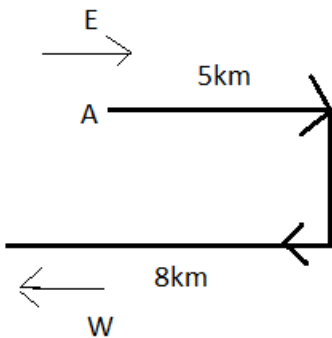
Question 90

Varun walked 5 km from point A and turned right two times and walked 8 km respectively facing towards west. Which direction did he start at point A?

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

Answer: A

Explanation:



Question 91

Find the missing number in the following series.

71, 65, 59, (...), 47, 41

- A 50
- B 51
- C 53
- D 52

Answer: C

Explanation:

53 is the correct answer

common difference is -6 in this series

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Question 92

Which of the following is a chemical change?

- A Melting of ice to give water
- B Combustion of Liquefied Petroleum Gas (LPG)
- C Boiling of water to give water vapour
- D Dissolution of salt in water

Answer: B

Question 93

In which of the following cities was the railway stations recently renamed as Puratchi Thalaivar Dr. M.G. Ramachandran Central Railway Station?

- A Hyderabad
- B Madurai
- C Coimbatore
- D Chennai

Answer: D

Question 94

P and Q working individually can finish a job in x and y days respectively. P starts the work and they both work on alternate days and the job is finished in 7 days. If Q starts the work and with P working on alternate days. the work gets over in $6\frac{3}{4}$ days. Compare the efficiencies of P and Q.

- A Q's Efficiency =75% P's Efficiency
- B P's Efficiency =75% Q's Efficiency
- C P's Efficiency =55% Q's Efficiency
- D P's Efficiency:55% Q's Efficiency=2:3

Answer: B

Explanation:

When P starts the work then job finish in 7 days and when Q starts the work then job finish in $6\frac{3}{4}$ days.

Time taken by P to complete the work = x days

Time taken by Q to complete the work = y days

When P starts work then P works 4 days and Q works 3 days.

$$\frac{4}{x} + \frac{3}{y} = 1 \text{---(1)}$$

(∵ work done by P + work done by Q = total work)

When Q starts work then Q works $3\frac{3}{4}$ and P works 3 days.

$$\frac{3}{x} + \frac{15}{4y} = 1 \text{---(2)}$$

Equation (1) multiply by 3 and equation (2) multiply by 4.

$$\frac{12}{x} + \frac{9}{y} = 3 \text{---(3)}$$

$$\frac{12}{x} + \frac{15}{y} = 4 \text{---(4)}$$

on solving both equations,

$$y = 6 \text{ days}$$

from equation (1)-

$$\frac{4}{x} + \frac{3}{6} = 1$$

$$\frac{4}{x} = 1/2$$

$x = 8$ days

Total work = efficiency \times time

work is same then -

Efficiency of P \times 8 = Efficiency of Q \times 6

\therefore P's Efficiency = 75% Q's Efficiency

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Question 95

Which of the following States won the platinum of Web Ratna Award in Digital India Awards 2018?

- A Madhya Pradesh
- B Himachal Pradesh
- C Tripura
- D Kerala

Answer: C

Question 96

Mixture can be _____ in nature.

- A Both homogeneous and heterogeneous
- B Pure substance
- C Homogeneous
- D Heterogeneous

Answer: A

Question 97

What is the formula for the force of attraction (F) between two objects of masses M and m which lie at a distance d from each other, where G is the constant of proportionality called as universal gravitation constant?

- A $F = \frac{G \times d^2}{M \times m}$
- B $F = \frac{G \times d}{M \times m}$
- C $F = \frac{G(M \times m)}{d}$
- D $F = \frac{G(M \times m)}{d^2}$

Answer: D

Explanation:

The law of **gravitation** states that the **force of attraction(F)** between any **two objects** is **proportional to the** product of their **masses M and m** and **inversely proportional to the** square of the **distance (d)** between them.

The gravitational constant is the proportionality constant used in Newton's Law of Universal Gravitation, and is commonly denoted by G.

$$G = 6.673 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$$

$$F = \frac{G(M \times m)}{d^2}$$

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Question 98

Who is the Father of Genetics?

- A Mendel
- B Morgan
- C Castle
- D Punnet

Answer: A

Question 99

When was the first session of the Constituent Assembly held?

- A 1949
- B 1948
- C 1946
- D 1947

Answer: C

Question 100

A current of 10 Ampere flows through a wire whose ends are at a potential difference of 3 Volts. Calculate the resistance of the wire.

- A 6Ω
- B 0.6Ω
- C 0.3Ω
- D 3Ω

Answer: C

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