



RRB JE 23rd May 2019 Shift-1

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Instructions

For the following questions answer them individually

Question 1

Food cans are coated with tin and NOT zinc because?

- A Zinc is less reactive than tin
- B Zinc is more reactive than tin
- C Zinc has higher melting point than tin
- D Zinc is costlier than tin

Answer: B

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Question 2

Find ODD one out from the given options.

- A Ink : Pen
- B Stamp : Letter
- C Car : Engine
- D Ticket : Train

Answer: C

Question 3

A ray of light appearing to meet at the principal focus of a concave lens emerge after refraction will be?

- A Parallel to the principal axis
- B Without any deviation
- C Through the centre of curvature
- D Through the principal focus

Answer: A

Question 4

Which is the hardest substance in the human body?

- A Knee cap
- B Finger nail
- C Tooth enamel
- D Skull bones

Answer: C

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Question 5

Find the $\cos^4 A - \sin^4 A$?

- A 0
- B $\sin^2 A + \cos^2 A$
- C 2
- D $\cos 2A$

Answer: D

Explanation:

$$\cos^4 A - \sin^4 A = (\cos^2 A - \sin^2 A)(\cos^2 A + \sin^2 A)$$

We know that, $\cos^2 A - \sin^2 A = \cos 2(A)$

and $\cos^2 A + \sin^2 A = 1$

Therefore,

$$\cos^4 A - \sin^4 A = \cos 2A$$

Question 6

Compensatory Afforestation Fund Bill was passed by Rajya Sabha of India in the year?

- A 2008
- B 2014
- C 2010
- D 2016

Answer: D

Question 7

What is the gain percent when articles bought at 6 pieces for Rs.5 are sold at 5 pieces for Rs.6?

- A 30%
- B 44%
- C 33%
- D 25%

Answer: B

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Question 8

What is the relationship between Frequency ν , Wavelength λ and Speed of the Sound v ?

- A $\nu = \lambda \times v$

B $\nu = \lambda \times v^2$

C $\nu = \frac{\lambda}{v}$

D $\nu = \frac{v}{\lambda}$

Answer: A

Question 9

Which number will best complete the relationship given below?

13 : 38 :: 17 : ?

A 53

B 55

C 50

D 57

Answer: C

Explanation:

Given, 13 : 38 :: 17 : x

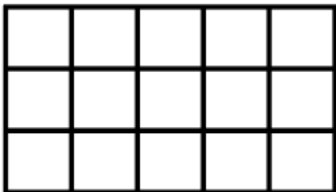
$$13/38 = (13 \times 3) - 1 = 38$$

In the same way, $(17 \times 3) - 1 = 50$

therefore, 13 : 38 :: 17 : 50 will be the equation.

Question 10

How many squares are there in the given figure?



A 18

B 21

C 26

D 12

Answer: C

Explanation:

Number of squares in the figure = $15 + 2 + 4 + 4 + 1 = 26$

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Question 11

Which of these numbers has the most number of divisors?

A 240

- B 156
- C 200
- D 172

Answer: A

Explanation:

Divisors of =

240 = 1 2 3 4 5 6 8 10 12 15 16 20 24 30 40 48 60 80 120 240

156 = 1 2 3 4 6 12 13 26 39 52 78 156

200 = 1 2 4 5 8 10 20 25 40 50 100 200

172 = 1 2 4 43 86 172

clearly 240 is the ans.

Question 12

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

Statements:

- 1) Some Mumbai is Delhi.
- 2) Some Kolkata is Mumbai.
- 3) Some Chennai is Delhi.

Conclusions:

- I. All Kolkata is Chennai.
- II. No Chennai is Kolkata.

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

Answer: A

Question 13

In which of the Union Territories does the Panchayati Raj system NOT exist?

- A Delhi
- B Daman and Diu
- C Chandigarh
- D Dadra and Nagar Haveli

Answer: A

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Question 14

If 'yellow' is called 'blue'; 'blue' is called 'white'; 'white' is called 'green', 'green' is called 'brown' and 'brown' is called 'red', what is the colour of 'milk'?

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

Answer: B

Explanation:

Given ,

'yellow' = 'blue'

'blue' = 'white'

'white' = 'green'

'green' = 'brown'

'brown' = 'red'

then , milk = ?

Milk is white in colour. So, white is called as green.

Question 15

'A' sells goods to 'B' at 25% profit for Rs.300. 'B' sells it to 'C' at 10% loss. In this sale, C's costprice is equal to what percent of A's cost price?

- A 87.5%
- B 110%
- C 112.5%
- D 97.5%

Answer: C

Explanation:

A's SP = 300 rs = B's CP

P% = 25%

therefore = A's CP = Then C = $\{100/(100+p)\} \times SP$

HENCE = $(100/(100+25))*300 = 240$ rs

now , 'B' sells it to 'C' at 10% loss

SP of B = SP = $\{(100-L)/100\} \times CP$

SP = $\{(100-10)/100\} \times 300 = 270$ RS

C's costprice is equal to of A's cost price % = $(270/240)*100 = 225/22 = 112.5\%$

Question 16

Facing towards south, Ram started walking and turned left after walking 30 m. He walked 25 m and turned left and walked 30 m. How far and in which direction is he from his starting position?

- A 30 m, east
- B At the starting point only
- C 25 m, west

D 25 m, east

Answer: D

Explanation:

Initially, he is facing towards south,

He started walking and turned left after walking 30m.

he walked 25m and turned left and walked 30m

hence, clear from the figure, 25m far away in east direction.

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Question 17

The battle of Khanwa was fought between?

- A Humayun and Nasiruddin Nasrat Shah
- B Humayun and Sher Shah Suri
- C Babur and Rana Sanga
- D Akbar and Rana Sanga

Answer: C

Explanation:

The Battle of Khanwa was fought near the village of Khanwa, in Bharatpur District of Rajasthan, on March 16, 1527. It was fought between the invading forces of the first Mughal Emperor Babur and the Rajput forces led by Rana Sanga of Mewar, after the Battle of Panipat.

Question 18

If $\frac{3}{11} < \frac{x}{3} < \frac{7}{11}$, which of the following values can 'x' take?

- A 2
- B 0.5
- C 3
- D 1

Answer: D

Explanation:

$$\frac{3}{11} < \frac{x}{3} < \frac{7}{11}$$

$\frac{3}{11} < \frac{x}{3}$ (cross multiply)

the answer should be as value of $11x$ be greater than 9

$$\frac{x}{3} < \frac{7}{11} \text{(cross multiply)}$$

the answer should be as value of $11x$ be smaller than 21

so, the only option is $x = 1$

Question 19

After full moon, the next fourteen days where the moon grows thinner and thinner and becomes invisible is called as _____.

- A Increasing phase of the moon
- B Waning phase of the moon
- C Waxing phase of the moon
- D Growing phase of the moon

Answer: B

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Question 20

After spending $\frac{1}{4}$ th of pocket money on chocolates and $\frac{1}{8}$ th on pizza, a girl is left with Rs.40. How much money did she have at first?

- A Rs.100
- B Rs.64
- C Rs.52
- D Rs.80

Answer: B

Explanation:

Let the pocket money be = x

The girl spend = , $\frac{1}{4}$ on chocolate and $\frac{1}{8}$ on pizza

so, total money spend = $((\frac{1}{4})+(\frac{1}{8})) = (\frac{3}{8}) * x$

Left money = $x - ((\frac{3}{8}) * x) = (\frac{5 * x}{8})$

given , left money = 40rs

therefore, $(\frac{5 * x}{8}) = 40$

$x = (40 * 8) / 5$

= 64 rs .

Total pocket money = 64 rs

Question 21

In which state did Bharatanatyam originate?

- A Gujarat
- B Tamil Nadu
- C Kerala
- D Odisha

Answer: B

Question 22

Three men entered into a business in partnership for 14 months, 8 months and 7 months. If the ratio of their profit is 5 : 7 : 8, what is the ratio of their investments?

- A 20 : 49 : 64

- B 5 : 4 : 4
C 28 : 49 : 64
D 5 : 7 : 8

Answer: A

Explanation:

Let their investments be Rs. x for 14 months, Rs. y for 8 months and Rs. z for 7 months respectively.

Then, $14x : 8y : 7z = 5 : 7 : 8$.

Now,

$$14x/8y=5/7$$

$$98x=40y = y=49x/20$$

And, $14x/7z = 5/8$

$$112x = 35z$$

therefore, $z = 112x/35 =$

hence, $16x/5$

now, $x:y:z = x:(49x/20):(16x/5)$

by lcm, the equation will give

$$20:49:64$$

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Question 23

In 1990, which sport was introduced in the Asian Games for the first time?

- A Triathlon
B Kabaddi
C Snooker
D Power lifting

Answer: B

Question 24

How will the light rays passing from air into a glass prism bend?

- A Away from the normal
B Almost at 90 degrees with normal
C As the normal
D Towards the normal

Answer: D

Question 25

Simplify $3^{\frac{1}{2}} + 5^{\frac{2}{3}} - 4^{\frac{7}{6}}$

- A 2

- B 8
- C 12
- D 4

Answer: D

Explanation:
simplifying ,

$$(7/2)+(17/3)-(31/6)= (21+34-31)/6 = (55-31)/6 = 24/6 = 4$$

ans= 4

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Question 26

Find the missing number in the following series.

28, 60, 90, 117, (...), 158

- A 132
- B 144
- C 136
- D 140

Answer: D

Explanation:

28, 60, 90, 117,....., 158

the series follows as =60-28 = 32

$$90-60 = 30$$

$$117 - 90 = 27 \text{ (successive subtraction of 2, 3, 4....going on)}$$

therefore , $x - 23 = 117$ (as after 27 , we need to subtract 4 from it which will give 23)

$$x = 140$$

Question 27

Which of the following is a byproduct of soap?

- A Isoprene
- B Ethylene glycol
- C Butene
- D Glycerin

Answer: D

Question 28

Find the ODD one out from the given options.

- A 885
- B 695

C 489

D 395

Answer: C

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Question 29

In which state is the Benaras Hindu University (BHU) located?

A Jharkhand

B Bihar

C Uttar Pradesh

D Uttaranchal

Answer: C

Question 30

Which of the following occurs due to deficiency of vitamin K?

A Failure of clotting of blood

B Non-maturation of ovum

C Blastocyst formation in uterus

D Neuritis

Answer: A

Question 31

Complete the series. 5, 4, 6, 15, 56, (...)

A 253

B 275

C 271

D 283

Answer: B

Explanation:

as given , 5, 4, 6, 15, 56, (...)

$$5 \times 1 - 1 = 4$$

$$4 \times 2 - 2 = 6$$

$$6 \times 3 - 3 = 15$$

.....

$$56 \times 5 - 5 = 275$$

Question 32

Complete the series. 31, 29, 24, 22, 17, (...)

- A 13
- B 14
- C 12
- D 15

Answer: D

Explanation:

31, 29, 24, 22, 17, (...)

as , this is a simple alternating number subtraction series, which subtracts 2, then 5.

then , $31-2=29$, $29-5=24$, $24-2=22$, $22-5=17$, $17-2=15$

therefore , 15 will come next .

Question 33

Which following blood groups is known as Universal Donor?

- A A
- B B
- C AB
- D O

Answer: D

Question 34

The valency of nitrogen in NH_3 is?

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

Answer: D

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Question 35

What happens to the irregularities of the two surfaces which causes static friction?

- A Vanishing
- B Interlocking
- C Rolling

D Sliding

Answer: B

Question 36

Raja is three times as old as Arun. Three years ago, he was four times as old as Arun. How old is Raja now?

A 6

B 12

C 27

D 15

Answer: C

Explanation:

Let arun = x

then , raja = 3x (given)

Three years earlier , arun = x-3 and raja = 3x-3

Then , Three years ago, he was four times as old as Arun.

Then , $4(x-3)=3x-3$

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

x= 9

and then raja = $3*x = 3*9 = 27$ years

Question 37

A thief escapes in a car driving at 60 km/h towards a city 400 km away. Only after 30 minutes, the police start to chase at 80 km/h. What distance will the police have covered when the thief is caught?

A 90 km

B 120 km

C 70 km

D 85 km

Answer: B

Explanation:

lets assume ,

Police caught the thief d1 km later

Time Taken by Thief for d1 km = $D/60$ hr

Time Taken by Police = $d1/80$ hr

$d1/60 - d1/80 = 1/2$ (30 Mins = 1/2 hr)

taking lcm of 60 and 80

$$4d1 - 3d1 = 120$$

=> $d1 = 120$ km

therefore, $d1 = 120$ km

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Question 38

The sum of the total number of protons and neutrons present in the nucleus of an atom is known as? A) Gauss number

- A Avogadro number
- B Gauss number
- C Atomic number
- D Mass number

Answer: D

Question 39

In a certain code language, 'put tir fin' means 'delicious juicy fruit', 'tie dip sig' means 'beautiful white lily', 'sig lon fin' means 'lily and fruit'. Which of the following stands for 'and' in that language?

- A tir
- B lon
- C sig
- D fin

Answer: B

Explanation:

Given ,

put tir fin = delicious juicy fruit

tie dip sig = beautiful white lily

sig lon fin = lily and fruit

therefore , from last eq. sig = lily and fin = fruit.

hence , lon = and

Question 40

Which of the following reactions produces insoluble salts?

- A Neutralisation
- B Oxidation
- C Precipitation
- D Reduction

Answer: C

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Question 41

WHO has established _____ initiative for the prevention and control of noncommunicable diseases.

- A Mobile MIM
- B ResolutionMD
- C Be He@lthy,Be Mobile
- D AirStrip ONE

Answer: C

Question 42

A courtyard 4.55 m long and 5.25 m broad is paved with square tiles of equal size. What is the largest size of tile used?

- A 21 cm
- B 25 cm
- C 35 cm
- D 28 cm

Answer: C

Explanation:

L of the courtyard = 4.55 m = 455 cm

B of the courtyard = 5.25 m = 525 cm

Now, we need to find the HCF of 455 and 525

Now,

$$455 = 13 \times 7 \times 5$$

$$525 = 5^2 \times 7 \times 3$$

$$\text{HCF of } 455 \text{ and } 525 = 5 \times 7 = 35$$

Therefore,

the largest size of the tile used = 35 cm

Question 43

If $S = \frac{3T}{2}$, then express 'T' as a percentage of S + T.

- A 75%
- B 40%
- C 25%
- D 20%

Answer: B

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Question 44

What is aerobic respiration?

- A Respiration through gills

- B Respiration through skin
- C Respiration without molecular oxygen
- D Respiration in presence of oxygen

Answer: D

Question 45

Which of the following has highest amount of citric acid?

- A Lime
- B Banana
- C Mango
- D Grapes

Answer: A

Explanation:

Citric acid is most prevalent in citrus **fruits** and juices. Of these **fruits**, lemons and limes have the most citric acid. While oranges, **grapefruits**, and berries also contain appreciable amounts, lemons and limes will most significantly contribute to the citric acid content.

Question 46

Evaluate $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \dots ?$

- A $\frac{1}{50}$
- B 3
- C $\frac{1}{22}$
- D 2

Answer: D

Explanation:

$$1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \dots$$

Use GP formula as

$$\frac{(1-r^n)}{(1-r)}$$

here $n = \infty$

$$\text{therefore, } \left(\frac{1 - \left(\frac{1}{2}\right)^\infty}{1 - \left(\frac{1}{2}\right)} \right)$$

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

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Question 47

A certain distance is covered at a certain speed. If half the distance is covered in double the time, what is the ratio of the two speeds?

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

Answer: D

Explanation:

Let x km distance be covered in y h.

So, speed in first case = x/y km/hr

And speed in second case = $(x/2)/(2*y) = x/4y$ km/hr

Required ratio = $(x/y)/(x/4y) = (1/1)/(1/4)$

= 4 : 1

Question 48

What determines the sex of a child?

- A Blood group of mother
- B Blood group of father
- C Rh factor of the parents
- D Chromosomes

Answer: D

Question 49

Complete the series. BB, OD, OG, KL, (...)

- A VD
- B AG
- C SS
- D LO

Answer: C

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Question 50

Who among the following is the youngest player to play for India in T20 Internationals?

- A Jaydev Unadkat
- B Hardik Pandya
- C Washington Sundar

D Ishan Kishan

Answer: C

Question 51

Find the missing number in the following series.

A 85

B 91

C 94

D 89

Answer: D

Explanation:

As the series is not available .

Question 52

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

Statement:

"Use cold cream for fair complexion"—an advertisement.

Conclusions:

I. People like to use cream for fair complexion.

II. People are easily fooled.

III. People respond to advertisements.

A Only conclusion II follows

B Only conclusions I and II follow

C None of the conclusions follows

D Only conclusion I follows

Answer: C

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Question 53

Find the missing group of alphabets in the following series. DZ, LA, (...), PK, LP

A WV

B PF

C OR

D LK

Answer: B

Question 54

What is the resultant resistance of $3\ \Omega$ and $6\ \Omega$ resistances connected in series?

A $16\ \Omega$

- B 2Ω
- C 9Ω
- D 12Ω

Answer: C

Question 55

If 200 men can dig a canal 8 hours a day in 6 days how long will take to dig a canal if 300 men work 6 hours a day

- A $4\frac{2}{3}$ days
- B 6 days
- C 7 days
- D $5\frac{1}{3}$ days

Answer: D

Explanation:

Given ,

men	hours	days
200	8	6
300	6	x

therefore ,

$$200 \times 8 \times 6 = 300 \times 6 \times x$$

$$(200 \times 8 \times 6) / (300 \times 6) = 16/3 = 5\frac{1}{3} \text{ days}$$

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Question 56

A power plant where the heat required to make steam to drive turbines to make electricity is obtained by burning fuels is called?

- A Solar power plant
- B Hydro electric power plant
- C Nuclear power plant
- D Thermal power plant

Answer: D

Question 57

A substance that increases the rate of a reaction without itself being consumed is called?

- A Reactant
- B Inhibitor
- C Catalyst
- D Product

Answer: C

Question 58

Which Indian waterfall has four distinct falls namely Raja, Rani, Rocket and Roarer in it?

- A Athirapilly
- B Dudhsagar
- C Jog
- D Hirni

Answer: C

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Question 59

The perimeter of a rectangle is twice the perimeter of a square of side 18 units. If the breadth of the rectangle is 45, what is its area?

- A 1360 sq. units
- B 1050 sq. units
- C 1152 sq. units
- D 1215 sq. units

Answer: D

Explanation:

Perimeter of square = $4a$

given , $a = 18$, perimeter $\Rightarrow 4 \times 18 = 72$

perimeter of rectangle $\Rightarrow 2(L+B)$

given , $B = 45$ units and perimeter of a rectangle is twice the perimeter of a square

therefore, $2(45+L) = 2(72)$

$$45 + L = 72$$

$$L = 27$$

Area of rectangle will be $L \times B = 27 \times 45 = 1215$ UNITS

Question 60

If $4 \ \$ \ 4 \ \# \ 2 = 8$ and $3 \ \$ \ 8 \ \# \ 2 = 12$, then $7 \ \$ \ 6 \ \# \ 3 = ?$

- A 14
- B 11
- C 16
- D 9

Answer: A

Explanation:

Given , $4 \ \$ \ 4 \ \# \ 2 = 8$ and $3 \ \$ \ 8 \ \# \ 2 = 12$

So , if $\$ = \times$ and $\# = /$

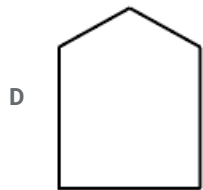
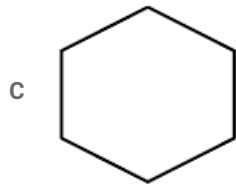
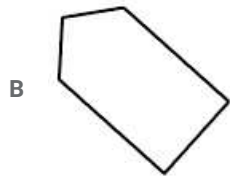
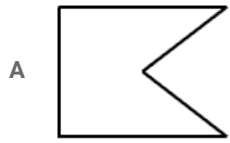
then, $4 \times 4 / 2 = 8$

$$3 \times 8 / 2 = 12$$

then, automatically, $7 \times 6 / 3 = 14$

Question 61

Find the ODD one out from the given options?



Answer: C

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Question 62

When litmus is added to a solution of borax, it turns _____.

- A Pink
- B Orange
- C Blue
- D Red

Answer: C

Question 63

Find the area of a square inscribed in a circle of radius 8 cm.

- A 128cm^2
- B 144cm^2
- C 136cm^2

D 64cm^2

Answer: A

Explanation:

The radius of circle = 8cm
diameter = $8 \times 2 = 16\text{cm}$

The diameter of circle = diagonal of square = 16cm
area of square = $(\text{diagonal})^2/2 = 16^2/2 = 128\text{cm}^2$

Question 64

Arun wants to pay Rs.16000 cash for a colour television and Bala wants to purchase the same for Rs.17776, due after 2 years. If the rate of Simple Interest is 5% per annum, which of the deals is better for the shopkeeper?

A Both are the same

B Neither of the deal

C From Arun

D From Bala

Answer: D

Explanation:

$SI = (P * R * T)/100$

P = Rs.16000

R = 5%

T = 2 Years

For Arun , $SI = (16000 * 5 * 2)/100 = 1600$

Amount = $16000 + 1600 = 17600\text{ rs}$

For Bala, 17776

So automatically , Bala is a better option.

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Question 65

A train passes a platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 km/h, what is the length of the platform?

A 300 m

B 360 m

C 120 m

D 240 m

Answer: D

Explanation:

Let the length of train L and length of platform P

speed of train $54\text{ km/h} = 54 * 5/18\text{ m/s} = 15\text{ m/s}$

it passes man on platform in 20 sec so

$L = 20 * 15 = 300\text{m}$ (distance = speed*time)

now when it crosses the platform effective distance becomes $L+P$

hence, $L+P=36 \times 15=540$ m

$P=540-L=540-300=240$ m

The length of the platform= 240 m

Question 66

Which of the following is a viral disease ?

- A Beriberi
- B Measles
- C Rickets
- D Syphilis

Answer: B

Question 67

Which of the following canon of taxation is also known as 'ability to pay' principle of taxation?

- A Canon of certainty
- B Canon of equity
- C Canon of economy
- D Canon of convenience

Answer: B

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Question 68

How much does a watch lose per day if hand coincides every 64 minutes?

- A $17\frac{5}{11}$
- B $32\frac{8}{11}$
- C $\frac{32}{11}$
- D $\frac{16}{11}$

Answer: B

Explanation:

In 24 hours the hands of hour and minute coincide 22 times. 24 hours equals $24 \times 60 = 1440$ minutes.

$1440/22 = 65$ and $5/11$ minutes. \Rightarrow every 65 and $5/11$ min, they coincide.

Now the clock in question coincide every 64 minutes; therefore 24 hours in your clock means 64×22 minutes or 1408 minutes.

So your clock should lose $1440 - 1408 = 32$ minutes.

Otherwise, the clock gains 32 minutes as it is faster than usual.

Question 69

Which of the following is a pesticide?

- A DDT
- B TNT
- C HCL
- D VCR

Answer: A

Question 70

The force of attraction between two objects of masses M and m which lie at a distance d from each other is inversely proportional to?

- A The distance between them : d
- B Square of distance between them : d^2
- C The square root of distance between them: $d^{1/2}$
- D The cube of distance between them : d^3

Answer: B

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Question 71

Mukhyamantri Yuva Swabhiman Yojana launched by Madhya Pradesh government is associated with?

- A 100 days of employment every year to urban youth from economically weaker sections
- B 200 days of employment every year to urban youth from economically weaker sections
- C Financial support to the girls from economically weaker sections
- D Free education to the children from economically weaker sections

Answer: A

Question 72

On a certain sum of money, the Simple Interest for 2 years is Rs.140 at 4% per annum. Find the difference between Compound Interest and Simple Interest on the same sum at same rate and same period.

- A Rs.3
- B Rs.1.80
- C Rs.2.40
- D Rs.2.80

Answer: D

Explanation:

Given ,

SI = 140Rs, R = 4% , T = 2 Years , P=x

SO,

SI = $(P \cdot R \cdot T) / 100 \rightarrow 140 = (x \cdot 4 \cdot 2) / 100 \rightarrow x = 1750$ rs.

$$CI \Rightarrow A = P(1 + R/100)^N$$

$$P = 1750 \text{ rs}, T = 2 \text{ Years}, R = 4\%$$

$$A = 1750(1 + (4/100))^2 = 1892.8 \text{ Rs}$$

$$CI = A - P = 1892.8 - 1750 = 142.8 \text{ rs}$$

difference between Compound Interest and Simple Interest = $142.8 - 140 = 2.8 \text{ rs}$

Question 73

Find the LCM and HCF of 1.75, 5.6 and 7.

A 24, 0.35

B 28, 0.25

C 24, 0.25

D 28, 0.35

Answer: D

Explanation:

Make the value same on every side of the numbers, which will make the numbers as 1.75, 5.60 and 7.00. Remove decimals for calculation, the numbers are 175, 560 and 700.

Now, H.C.F of 175, 560 and 700 is 35.

So, H.C.F of 1.75, 5.6 and 7 is 0.35.

L.C.M of 175, 560 and 700 is 2800.

So, L.C.M of 1.75, 5.6 and 7 is 28.00 i.e. 28.

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Question 74

If $a \times b = a + b + \sqrt{ab}$ then find the value of 4×9

A 20

B 29

C 49

D 19

Answer: D

Explanation:

Given, $a * b = a + b + \sqrt{ab}$

Then, $a=4, b=9$

apply in the formula, $(4+9+\sqrt{(4*9)})=19$

Question 75

'Pneumonia' is caused by the inflammation of -

A Heart

B Brain

C Liver

D Lungs

Answer: D

Question 76

Find $(1 - \cos^2\theta)(\cot^2\theta + 1) - 1$.

- A $\sec^2\theta$
- B 2
- C -2
- D θ

Answer: D

Explanation:

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

$$1 + \cot^2(\theta) = \operatorname{cosec}^2(\theta)$$

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

$$(\sin^2(\theta) = 1 - \cos^2(\theta))$$

Now let's substitute:

$$((1 - \cos^2(\theta))(1 + \cot^2(\theta)) - 1$$

$$((\sin^2(\theta))(\operatorname{cosec}^2(\theta))) - 1$$

The relationship between sin and cosec is:

$$\operatorname{cosec} = \frac{1}{\sin}$$

thus

$$\operatorname{cosec}^2(\theta) = \frac{1}{\sin^2(\theta)}$$

$$\text{and so } ((\sin^2(\theta))(\frac{1}{\sin^2(\theta)})) - 1 = 1 - 1 = 0$$

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Question 77

All acids produce _____ gas on reacting with metals.

- A Nitrogen
- B Hydrogen
- C Carbon dioxide
- D Oxygen

Answer: B

Question 78

Who among the following was posthumously awarded the Bharat Ratna in 2019?

- A Balwant Moreswar Purandare
- B Ashok Laxmanrao Kukade
- C Pranab Mukherjee

D Nanaji Deshmukh

Answer: D

Question 79

To change a temperature on the Kelvin scale to the Celsius scale, you have to _____ the given temperature.

- A Add 273 to
- B Divide 273 by
- C Multiply 273 by
- D Subtract 273 from

Answer: D

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Question 80

Six typists can type a given data in 16 days. How many days will 4 typists take to do the same work?

- A 24
- B 22
- C 18
- D 20

Answer: A

Explanation:

As given , Six typists can type a given data in 16 days.

6 Typists = 16 days

so, 4 Typists , $(6 \times 16) / 4 = 24$

therefore, 4 Typists will do the same work in 24 days.

Question 81

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

Seven members L, H, K, T, F, J and R represent different countries in Olympics, USA, China, Korea, France, Russia, Australia and Japan; each one competes for a different sport, viz. volleyball, archery, rifle shooting, tennis, boxing, athletics and football. The order of persons, countries and games is not necessarily the same. K represents China for archery. T represents USA but not for volleyball or rifle shooting. One who represents Japan competes for boxing. F competes for volleyball but not Korea. L represents Australia for athletics. The one who represents Russia competes for tennis. J does not represent Korea or Japan. R competes for rifle shooting. Which of the following combinations of member, sport and country are CORRECTLY matched?

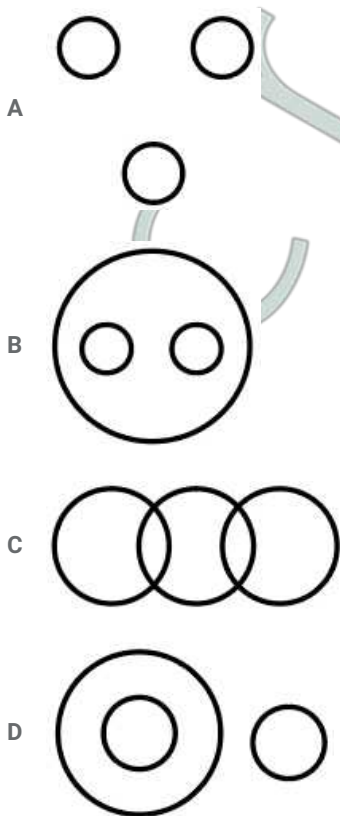
- A J—Tennis—France
- B J—Tennis—Russia
- C R—Tennis—France
- D R—Tennis—Russia

Answer: B

Question 82

Choose the Figure that best represents the relationship among the classes given below?

House, Brick, Bridge



Answer: C

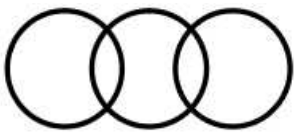
Explanation:

Option C is correct.

As House is made of bricks , and bridge is also made of bricks.

Therefore, Some bricks are house

Some bricks are bridge



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Question 83

If a current of 3 Amperes flows for 1 minute, how much charge flows in this time?

- A 60 Coulombs
- B 30 Coulombs
- C 90 Coulombs
- D 180 Coulombs

Answer: D

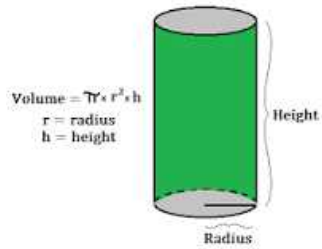
Question 84

Find the percentage of wastage material in converting a cylinder of base diameter 10 cm and height 20 cm into a cone of equal base, but double the height of the cylinder.

- A 33.3%
- B 20%
- C 35%
- D 25%

Answer: A

Explanation:



In the given cylinder , H= 20cm , D = 10 cm,

volume of the cylinder = $(\frac{22}{7}) * r^2 * h = (\frac{22}{7}) * 5^2 * 10 = 785.714 \text{ cm}^3$

volume of cone = $\frac{1}{3} \pi r^2 h = \frac{1}{3} * 3.14 * 5^2 * 20 = 523.333 \text{ cm}^3$(as the height got doubled in cone)

the percentage of wastage material in converting a cylinder = $785.714 - 523.333 = 262.381 \text{ cm}^3$

the required percentage.... = $(\frac{262.381}{785.714}) * 100 = 33.3\%$

Question 85

Which number will best complete the relationship given below? 12 : 46 :: 18 : ?

- A 70
- B 74
- C 72
- D 76

Answer: A

Explanation:

As given ,

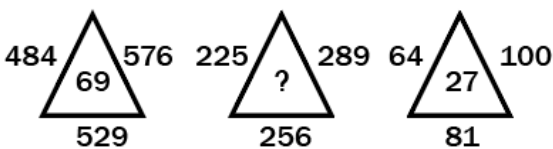
12 : 46 :: 18 : x

As simplified , cross multiply , $(18 * 46) / 12 = 69$

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Question 86

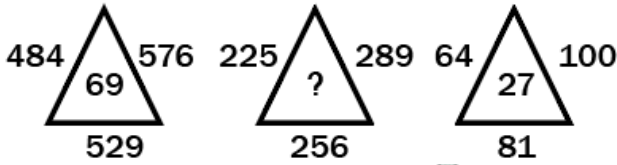
Choose the alternative that best replaces the question mark(?) in the given figure?



- A 48
- B 57
- C 41
- D 53

Answer: A

Explanation:



As, $\sqrt{484} = 22$

$$\sqrt{529} = 23$$

$$\sqrt{576} = 24$$

Then, $22 + 23 + 24 = 69$

Again, $\sqrt{225} = 15$

$$\sqrt{256} = 16$$

$$\sqrt{289} = 17$$

Then, $15 + 16 + 17 = 48$

Question 87

BrahMos II is a _____ currently under joint development by Russia's NPO

- A Main battle tank B
- B Hypersonic cruise missile
- C Subsonic cruise missile
- D Light Combat Aircraft

Answer: B

Question 88

Which of these diseases is usually transmitted by mosquitoes?

- A Arthritis
- B Jaundice
- C Chicken pox
- D Malaria

Answer: D

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Question 89

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

Arjun, Banu, Keerthi, Deepan, Harini, Vasanth, Gayathri and Kumar are sitting around a circle facing the center. Banu is third to the right of Vasanth and third to the left of Kumar. Keerthi is fourth to the left of Arjun. Arjun is not an immediate neighbour of Vasanth and Banu. Harini is not an immediate neighbour of Banu. Gayathri is second to the right of Deepan.

Who among the following is third to the left of Harini?

- A Deepan
- B Gayathri
- C Banu
- D Arjun

Answer: B

Question 90

What is the difference between the place and face values of '5' in the number 3675149?

- A 4995
- B 5000
- C 495
- D 4990

Answer: A

Explanation:

Given number = 3675149

Face value of 5 = 5

Place value of 5 = 5000

difference between the place and face values of '5' in the number 3675149 = $5000 - 5 = 4995$

Question 91

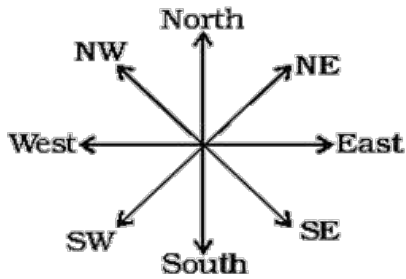
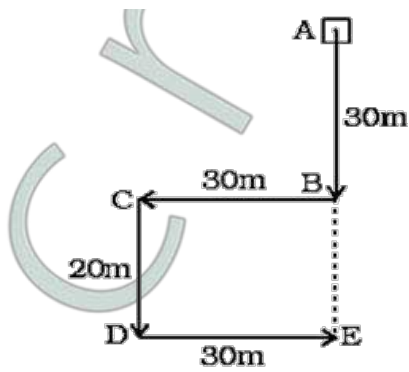
A man walks 30 m towards south. Then, turning to his right, he walks 30 m. Then, turning to his left, he walks 20 m. Again, turning to his left, he walks 30 m. How far is he from his starting point?

- A 30 m
- B 80 m
- C 50 m
- D 20 m

Answer: C

Explanation:

As given,



Therefore, he is $20\text{m} + 30\text{m} = 50\text{m}$ away from starting point.

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Question 92

Which of the following created the office of Governor General in India?

- A Charter Act, 1833
- B Charter Act, 1813
- C Government of India Act, 1935
- D Regulating Act 1773

Answer: D

Explanation:

The office of Governor-General was created under the Regulating Act of 1773. It was the First Parliamentary Ratification, Codification, Confirmation, Justification or Authorisation defines the Powers and Responsibilities of the Various Organs of the East India Company including its territorial control over Bengal.

Question 93

With which of the following sports is Mahesh Bhupathi associated?

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

Answer: D

Question 94

Which of the following elements has the highest electronegativity?

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

Answer: C

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Question 95

When two or more resistances are connected end to end consecutively, they are said to be connected in?

- A Series
- B Parallel
- C Straight
- D Line

Answer: A

Question 96

If BOOK-PEN = 8, then PEN-NIB = ?

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

Answer: B

Explanation:

1 2 3 4 5 6 7 8 9 10 11 12 13
a b c d e f g h i j k l m
14 15 16 17 18 19 20 21 22 23 24 25 26
n o p q r s t u v w x y z

Given, BOOK-PEN = 8

BOOK -> B=2, O=15, O=15, K=11 (Total=43)

PEN -> P=16, E=5, N=14 (Total=35)

BOOK-PEN=43-35=8 (Proved)

Now, PEN-NIB

PEN -> P=16, E=5, N=14 (Total=35)

NIB -> N=14, I=9, B=2 (Total=25)

PEN-NIB=35-25=10

Question 97

If $x + y = 11$, then $(-1)^x + (-1)^y$ is equal to ____ (where x, y are whole numbers).?latex

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

Answer: A

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Question 98

Find the value of $\sqrt{\cot^2\theta - \cos^2\theta}$?

- A $\cot\theta \operatorname{cosec}\theta$
- B $\cot\theta \cos\theta$
- C 1
- D $\cos\theta \operatorname{cosec}\theta$

Answer: B

Explanation:

$$\begin{aligned} & \sqrt{\cot^2\theta - \cos^2\theta} \\ & \sqrt{(\cos^2\theta/\sin^2\theta) - \cos^2\theta} \\ & \cos^2\theta\sqrt{(1/\sin^2\theta) - 1} \\ & \cos^2\theta\sqrt{(1 - \sin^2\theta)\sin^2\theta} \\ & \cos^2\theta\sqrt{\cos^2\theta - \sin^2\theta} \end{aligned}$$

therefore, $\cot\theta \cos\theta$

Question 99

Age of A : Age of B is 3 : 2. Ten years hence, the sum of their ages will be 80. What are their present ages?

- A 42, 28
- B 36, 24
- C 45, 30
- D 27, 18

Answer: B

Explanation:

Let the age of A be "x"

Let the age of B be "y"

then, as respect to the question : Age of A / Age of B

$$x/y = 3/2 \dots\dots\dots (I)$$

10 years later, A age will be= $x+10$

B age will be = $y+10$

Then,

$$x+10+y+10=80 \text{ (Given) } \dots\dots\dots\text{(II)}$$

$$x/y=3/2$$

Therefore, $x= (3*y)/2\dots\dots\dots\text{(applying this in eq.II)}$

$$((3*y)/2)+10+y+10=80$$

$$((3*y)/2)+20+y=80$$

$$(3y+40+2y)/2=80$$

$$(5y+40)=160$$

$$5y=120 \rightarrow y=24$$

Apply value of y in eq.1

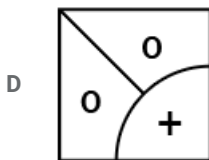
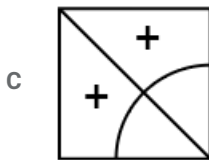
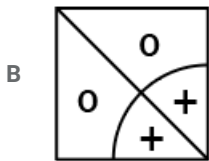
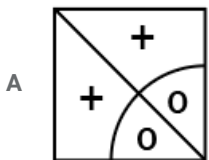
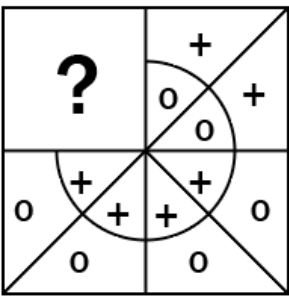
$$x/24=3/2 \rightarrow x=(3*24)/2 \rightarrow x=36$$

Therefore, Age of A = 36

Age of B = 24

Question 100

choose the Alternatives the figure the best that completes the pattern given below?

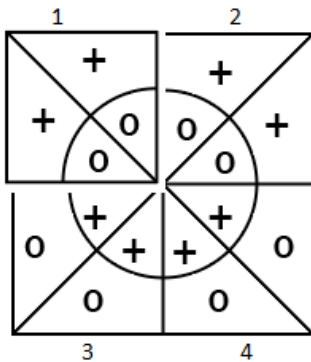


Answer: A

Explanation:

When we replace the square containing question mark with the options one by one, Option A alone best suits the square as it represents the same pattern followed in the question.

Replacing it with Option A:



Squares 3 and 4 have + inside the circle and O outside the circle. In the same way Squares 1 and 2 must have O inside the circle and + outside the circle.

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