CMAT 2018 Slot 2

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Quant

Instructions
For the following questions answer them individually

Question 1

What is the probability of getting a 'nine' or 'ten' on a single throw of two dice?

A 2/9

B 7/36

C 1/5

D 2/7

Answer: B

Explanation:
Probability = Expected number of outcomes/ Total number of outcomes.

Total number of outcomes we get in a single throw of two dice = 6×6 = 36.

Possible cases of getting 'nine' in a single throw of two dice:

dice 1	dice 2
three	six.....(1)
six	three.....(2)
four	five.....(3)
five	four.....(4)

So, total of 4 cases.

Possible cases of getting 'ten' in a single throw of two dice:

dice 1	dice 2
four	six.....(1)
six	four.....(2)
five	five.....(3)

So, total of 3 cases.

Expected number of outcomes = Total possible cases of getting 'nine' or 'ten' in a single throw of two dice = 4 + 3 = 7 .

So, Probability = $\frac{7}{36}$

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Question 2

The length of a room exceeds its breadth by 2 meters. If the length be increased by 4 meters and the breadth decreased by 2 meters, the area remains the same. Find the surface area of its walls if the height is 3 meters.

A $248m^2$

B $424m^2$

C $112m^2$

D $84m^2$

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Answer: D

Explanation:
Let the breadth(b) of the room be 'x' metres.

then, length(l) of the room = x+2 metres.

Area(A) = $l \times b$ = x(x+2) m^2

Given, length is increased by 4 meters and the breadth decreased by 2 meters

Then, new length(l') of the room = x+6 metres

new breadth(b') of the room = x-2 metres

New Area(A') of the room = $l' \times b'$ = (x+6)(x-2) m^2

Also given that, A = A'

$\Rightarrow x(x+2) = (x+6)(x-2)$

$\Rightarrow x^2 + 2x = x^2 + 4x - 12$

$\Rightarrow 2x = 12$

$\Rightarrow x = 6$

Therefore the length of the room (l) = 8 metres

and breadth of the room (b) = 6 metres

and given height of the room (h) = 3 metres

Since the room will be in the shape of a cuboid, Surface area = 2 ($l \times b + b \times h + l \times h$)

But the Surface area of Walls = Total Surface area - Area of Roof and Floor = 2 ($l \times b + b \times h + l \times h$) $- 2(l \times b) = 2(8 \times 3 + 6 \times 3) = 84m^2$

Hence, Surface Area of walls = 84 m^2.

Question 3

A bus covers a distance of first 50 km in 40 minutes, next 50 km at a speed of 2 km per minute and the next 30 km at a speed of 1.0 km per minute. What is its average speed during the entire journey?

A 61.5 kmph

B 55.06 kmph

C 82.1 kmph

D 80 kmph

Answer: C

Explanation:
Average Speed = Total distance covered $\div$ Total time taken

Total distance travelled = 50 + 50 + 30 = 130 km.

Total time taken = Time taken to travel first 50 km + Time taken to travel next 50 km + Time taken to travel next 30 km = $40 + 50 \div 2 + 30 \div 1 = 95$ minutes = $\frac{95}{60}$ hours.

$\Rightarrow$ Average Speed = $130 \div \frac{95}{60} = 82.1$ kmph

Question 4

Three wheels making 60, 36 and 24 revolutions in a minute start with a certain point in their circumference ownwards. Find when they will again come together in the same position.

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A 4 seconds

B 5 seconds

C 10 seconds

D Never

Answer: B

Explanation:
First wheel makes 60 revolutions in 1 minute

$\Rightarrow$ It makes 60 revolutions in 60 seconds

$\Rightarrow$ It makes 1 revolution in 1 second.

This implies, after every 1 second the certain point at which the wheel started its revolution reaches its initial position.

Similarly, Second wheel and Third wheel makes 36 and 24 revolutions in 1 minute respectively.

$\Rightarrow$ Second and Third wheel makes 1 revolution in $\frac{5}{3} and \frac{5}{2}$ seconds respectively.

So for all the multiples of $\frac{5}{3} and \frac{5}{2}$ seconds the certain point of second wheel and third wheel reaches its initial position respectively.

After LCM $\{1, \frac{5}{3}, \frac{5}{2}\}$ seconds all the three wheels will come together in the same position.

LCM of fractions = LCM of numerators/ HCF of denominators

$\Rightarrow$ LCM $\{1, \frac{5}{3}, \frac{5}{2}\}$ = LCM {1,5,5}$\div$HCF {1,3,2} = 5$\div$1 = 5.

Hence, after 5 seconds all the wheels will come again together in the same position.

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Question 5

A certain amount of money invested at 10% per annum compound interest for two years became Rs. 2000. What is the initial investment?

A Rs. 856

B Rs. 1,625

C Rs. 1,653

D Rs. 1,275

Answer: C

Explanation:
If the principle amount 'P' when compounded annually for 'n' years at 'R%" interest rate per annum becomes P'.

Then $P' = P[1 + \frac{R}{100}]^n$

Given P' = 2000, n = 2 years, R = 10%

$\Rightarrow P = P' \div [1 + \frac{R}{100}]^n$

$\Rightarrow P = 2000 \div [1 + \frac{10}{100}]^2$

$\Rightarrow P = 2000 \div 1.21$

$\Rightarrow P = 1653$

Hence the initial amount P = Rs. 1,653.

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Question 6

If the height of a right circular cone is increased by 200% and the radius of the base is reduced by 50%, then the volume of the cone.

A Remains unaltered

B Decreases by 25%

C Increases by 25%

D Increases by 50%

Answer: B

Explanation:

The Volume of the right circular cone of base radius 'r' and height 'h' is given by 'V' = $\frac{1}{3}\pi r^2 h$

Given 'h' has been increased by 200%

$\Rightarrow$ New height h' = h[1 + $\frac{200}{100}$] = 3h

also,radius of the base is reduced by 50%

$\Rightarrow$ New base radius r' = r[1 - $\frac{50}{100}$] = $\frac{r}{2}$

New Volume of the cone with new base radius r' and new height h' is given by V' = $\frac{1}{3}\pi r'^2 h' = \frac{1}{3}\pi(\frac{r}{2})^2(3h) = \frac{3V}{4}$.

Change in Volume = $\frac{NewVolume - OldVolume}{OldVolume} \times 100 = \frac{\frac{3V}{4} - V}{V} \times 100 = -25$

Hence the new volume decreased by 25 %.

Question 7

An electric appliance is priced at Rs. 600 initially. Because of market recession, price was successively reduced three times, each time by 10% of the price after the earlier reduction. What is the current price?

A Rs. 420

B Rs. 437.40

C Rs. 444.30

D Rs. 478

Answer: B

Explanation:

Initial price is given as 'I' = Rs. 600

After the first reduction, the initial price is reduced by 10%

$\Rightarrow$ the new price I' = $600[1 - \frac{10}{100}] = 540$

After second reduction, I' is reduced by 10%

$\Rightarrow$ the new price I'' = $540[1 - \frac{10}{100}] = 486$

After third reduction, I'' is reduced by 10%

$\Rightarrow$ the new price I''' = $486[1 - \frac{10}{100}] = 437.4$

Hence the Current price after three successive reductions is Rs. 437.4

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Question 8

Below given is the Table showing Age-wise Ownership of mobiles:

Brand	Up to 1 year old	1-2 years old	2-3 years old	More than 3 years old
LG	15%	45%	40%	
SAMSUNG	5%	15%	25%	55%
NOKIA	10%	10%	10%	70%
SONY	25%	55%	20%	
MICROMAX	15%	50%	20%	15%

If 1 crore mobiles were sold last year, how many LG sets were sold?

A 10, 000

B 12,500

C 15,000

D Cannot be determined

Answer: D

Explanation:
Let say,

The number mobiles sold in last year of the brands LG, SAMSUNG, NOKIA, SONY, MICRO-MAX be A, B, C, D, and E respectively.

Given that A+B+C+D+E = 1 crore.

Out of these 1 crore mobiles, the number of mobile sets of LG sold are 15% of A = $\frac{15}{100} \times A$.

But from the given data, the values of A, B, C, D, and E cannot be found out.

So the number of LG sets sold last year cannot be determined.

Question 9

$\sqrt{188 + \sqrt{51 + \sqrt{169}}}$ **= ?**

A 16.4

B 14.4

C 16

D 14

Answer: D

Explanation:

$\sqrt{188 + \sqrt{51 + \sqrt{169}}} = \sqrt{188 + \sqrt{51 + 13}} = \sqrt{188 + \sqrt{64}} = \sqrt{188 + 8} = \sqrt{196} = 14$

Question 10

In what time will Rs. 6,250 amount to Rs. 6,632.55 at 4% compound interest payable half-yearly?

A 1 year

B $\frac{3}{2}$ years

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C 3 years

D $\frac{5}{2}$ years

Answer: B

Explanation:
If the principle amount 'P' when compounded half-yearly at R% interest rate per annum for 'n' years, the new amount is P'.

then $P' = P[1 + \frac{R}{2\times100}]^n$

Given P' = 6,632.55, P = 6,250 and R = 4%

$\Rightarrow 6,632.55 = 6,250[1 + \frac{4}{2\times100}]^n$

$\Rightarrow 1.061 = 1.02^n$

Taking logarithm on both sides we get,

n = log(1.061)÷log(1.02) = 3 years.

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Question 11

Expenditures of a Company (in Lakh Rupees) per Annum Over the given Years was as under.

year	Salary	Fuel and Transport	Bonus	Interests on loans	Taxes
2008	576	196	6	25.4	85
2009	682	224	5	32	112
2011	648	202	7.5	44.6	78
2012	672	266	7.3	40.4	98
2013	740	282	8	52.4	105

What is the average salary expenditure(in Lakh Rupees) per Annum during this period?

A 663.6

B 666.3

C 636.6

D 663.3

Answer: A

Explanation:
Average Salary Expenditure (in Lakh Rupees) per annum = Total salary expenditure in all these years ÷Total number of years

= $\frac{576+682+648+672+740}{5}$

= 663.6

Question 12

Number of different categories of goods sold in the city over the years (in thousands) is as given under:

Year	TV	Refrigerator	Microwave	Laptops	cell phones
2010	26	64	232	153	340
2011	45	60	242	172	336
2012	72	79	248	210	404
2013	81	93	280	241	411
2014	107	112	266	235	442

In which of the following years was the number of refrigerators sold approximately 25% of the number of cell phones sold?

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A 2011

B 2012

C 2013

D 2014

Answer: D

Explanation:
Option A:

In 2011, number of Refrigerators sold =60

number of Cell phones sold = 336

$\Rightarrow$ number of refrigerators sold as a percentage of number of cell phones sold = $\frac{60}{336} \times 100 = 17.85$

Option B:

In 2012, number of Refrigerators sold = 79

number of Cell phones sold = 404

$\Rightarrow$ number of refrigerators sold as a percentage of number of cell phones sold = $\frac{79}{404} \times 100$ = 19.5

Option C:

In 2013,number of Refrigerators sold = 93

number of Cell phones sold = 411

$\Rightarrow$ number of refrigerators sold as a percentage of number of cell phones sold = $\frac{93}{411} \times 100$ = 22.6

Option D:

In 2014, number of Refrigerators sold = 112

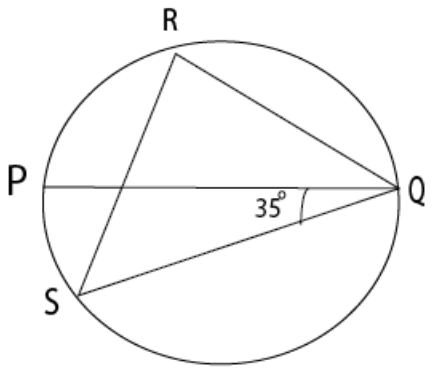
number of Cell phones sold = 442

$\Rightarrow$ number of refrigerators sold as a percentage of number of cell phones sold = $\frac{112}{442} \times 100$ = 25.33

Hence Option D is the correct answer.

Question 13

In the figure, PQ is a diameter of the circle. Angle PQS = 35°. Find angle QRS.



A 55°

B 45°

C 35°

D 60°

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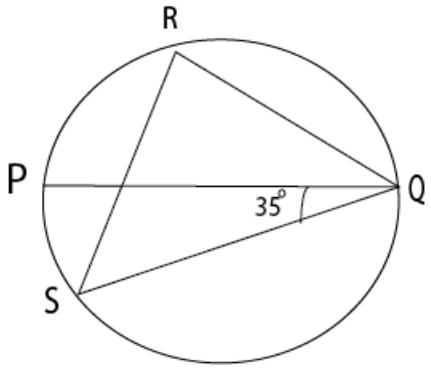
Answer: A

Explanation:



SInce PQ is the diameter, the angle subtended by it at R is 90 deg. i.e., $\angle$ PRQ = 90 deg.

Let $\angle$ RPQ = θ, then $\angle$RQP = 90 - θ

As the angles subtended by a chord in same segment are equal, $\angle$RPQ = $\angle$RSQ = θ

In triangle RSQ, $\angle$QRS + $\angle$RSQ + $\angle$RQS = 180

$\Rightarrow$ $\angle$QRS + θ + 35 + 90 - θ = 180

$\Rightarrow$ $\angle$QRS = 180 - 125 = 55 deg.

Hence $\angle$QRS = 55 deg.

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Question 14

If x = $\sqrt[6]{5}$ and y = $\sqrt[5]{4}$, Which of the following is true?

A x > y

B y > x

C x = y

D None

Answer: B

Explanation:

Given x = $\sqrt[6]{5}$ and y = $\sqrt[5]{4}$

which can also be written as x = $5^{\frac{5}{30}}$ and y = $4^{\frac{6}{30}}$

which can be further written as x = $\sqrt[30]{5^5}$ and y = $\sqrt[30]{4^6}$

As we know $4^6 > 5^5$

$\Rightarrow$ $\sqrt[30]{4^6} > \sqrt[30]{5^5}$

$\Rightarrow$ y > x

Question 15

If a and b are positive real numbers and a * b denotes √ab, what is the value of 8 * (4 * 16)?

A $4^{1/3}$

B 16

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C 8

D $4\sqrt{2}$

Answer: C

Explanation:
Given, If a and b are positive real numbers then a * b denotes √ab

Consider 4 * 16 = $\sqrt{4 \times 16} = \sqrt{64} = 8$

then 8 * 8 = $\sqrt{8 \times 8} = \sqrt{64} = 8$

Hence the value of 8 * (4 * 16) = 8

Question 16

The average age of three men is 50 years and their ages are in the proportion 3:5:7. The age of the youngest man is:

A 40 years

B 30 years

C 35 years

D 50 years

Answer: B

Explanation:
Given the proportion of ages of three men are 3:5:7.

Let their ages be 3k, 5k, 7k ,where k is any constant.

Given average of ages of three men = 50

$\Rightarrow \frac{3k+5k+7k}{3} = 50$

$\Rightarrow \frac{15k}{3} = 50$

$\Rightarrow 5k = 50$

$\Rightarrow k = 10$

Therefore the ages of three men are 30, 50, and 70 years.

The age of the youngest men is 30 years.

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Question 17

By selling mangoes at the rate of 64 for Rs. 2,000, the vendor loses 40%. How many should he sell for Rs.1000 so as to gain 20%?

A 12

B 16

C 15

D 20

Answer: B

Explanation:
If 64 mangoes are sold at Rs.2000, each mango will be sold at Rs. $\frac{2000}{64}$

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Hence Selling price (S.P) of each mango = Rs. 31.25

Given loss percentage of vendor at this S.P = 40%

Loss percentage = $\frac{C.P-S.P}{C.P} \times 100$

$\Rightarrow \frac{40}{100} = \frac{C.P-S.P}{C.P}$

$\Rightarrow S.P = 0.6 \times C.P$

$\Rightarrow C.P = \frac{31.25}{1.4} = 52$

Therefore Cost Price of 1 mango (C.P) = Rs. 52

Let us calculate the S.P of each mango in order to get a 20% gain.

Gain percentage = $\frac{S.P-C.P}{C.P} \times 100$

$\Rightarrow \frac{20}{100} = \frac{S.P-C.P}{C.P}$

$\Rightarrow S.P = 1.2 \times C.P$

$\Rightarrow S.P = 62.5$

So, to get a gain of 20% we need to sell each mango at Rs. 62.5

Let say we sold 'x' number of mangoes.

Selling price of these 'x' number of mangoes (S.P) = Rs. 62.5x

But given that this S.P = Rs. 1000

$\Rightarrow 62.5x = 1000$

$\Rightarrow x = \frac{1000}{62.5} = 16.$

Therefore a total of 16 mangoes are to be sold for Rs. 1000 to get a gain of 20%.

Question 18

The area of a triangle metal plate with base 88 cm and altitude 64 cm is to be reduced to one-fourth of its original area by making a hole of circular shape at the center. The radius of this hole will be:-

A 24.8 cm

B 28 cm

C 56 cm

D $4\sqrt{42}$ cm

Answer: D

Explanation:

Area of triangular metal plate with base(b) = 88 cm and altitude(h) = 64 cm is given as A = $\frac{1}{2}b \times h = \frac{1}{2}88 \times 64 = 2816cm^2$

Given this area is to be reduced to one-fourth by making a hole in the shape of circle

$\Rightarrow$ Reduction in the area of the triangle = Area of the circular hole

$\Rightarrow \frac{3}{4} \times A = \frac{1}{2}\pi r^2$

$\Rightarrow \frac{\frac{3}{2} \times 2816}{\pi} = r^2$

$\Rightarrow r = \sqrt{1344} = 4\sqrt{42}$

So, the radius of the circular hole = $4\sqrt{42}$ cm.

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Question 19

Find the value of $\sqrt{\frac{2+\sqrt{3}}{2-\sqrt{3}}}$

Correct to three places of decimal.

A 3.141

B 2.732

C 3.124

D 3.732

Answer: D

Explanation:

Let us consider $\frac{2+\sqrt{3}}{2-\sqrt{3}}$

Rationalising the denominator by multiplying and diving with 2+ $\sqrt{3}$ we get,

$\frac{(2+\sqrt{3})\times(2+\sqrt{3})}{(2-\sqrt{3})\times(2+\sqrt{3})} = \frac{(2+\sqrt{3})^2}{4-3} = (2+\sqrt{3})^2$

Now,

$\sqrt{\frac{2+\sqrt{3}}{2-\sqrt{3}}} = \sqrt{(2+\sqrt{3})^2} = 2+\sqrt{3} = 2+1.732 = 3.732$

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Question 20

A mixture of petrol and kerosene weighing 5 kg contains 5% kerosene. How much more kerosene (approx.) must be added into it to make it 10%?

A 250 gm

B 275 gm

C 300 gm

D 425 gm

Answer: B

Explanation:

Initial amount of Kerosene(I) = 5% of 5 kg mixture of petrol and kerosene = $\frac{5}{100} \times 5000 = 250$ grams

Let say 'x' gm of Kerosene is added to the mixture.

The final amount of Kerosene in the mixture after the addition is given as 10%.

$\Rightarrow \frac{250+x}{5000+x} = \frac{10}{100}$

$\Rightarrow 2500 + 10x = 5000 + x$

$\Rightarrow 9x = 2500$

$\Rightarrow x = 275gm$

Therefore additionally 275 gm of kerosene is to be added to the mixture to make it 10%.

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Question 21

A student who gets 20% marks fails by 20 marks, but another student who gets 36% marks gets 44 marks more than minimum passing marks. Find the maximum number of marks and percentage necessary for passing.

A 300, 20%

B 600, 20%

C 400, 25%

D 400, 20%

Answer: C

Explanation:
Let the maximum number of marks be 'x' and minimum passing marks be 'y'.

Given, A student who gets 20% marks fails by 20 marks.

$\Rightarrow \frac{20}{100} \times x = y - 20$

$\Rightarrow 20x = 100y - 2000$.....(1)

Also given that, another student who gets 36% marks gets 44 marks more than minimum passing marks.

$\Rightarrow \frac{36}{100} \times x = y + 44$

$\Rightarrow 36x = 100y + 4400$.....(2)

(2) - (1) $\Rightarrow$ 16x = 6400

$\Rightarrow$ x = 400

From (1) or (2), we get y = 100

Hence, maximum number of marks = x = 400

Percentage necessary for passing = $\frac{y}{x} \times 100$ = 25%

Question 22

If 26 horses or 20 bullocks eat up the fodder in store in 170 days, in what time will 10 horses and 8 bullocks finish the same quantity of fodder?

A 212.67 days

B 162.33 days

C 212 days

D 216.67 days

Answer: D

Explanation:
Let amount eaten by each horse and each bullock in one day be 'h' units and 'b' units respectively.

So Total fodder = Total effciency $\times$ Total number of days

$\Rightarrow$ Total work = $26 \times h \times 170 = 20 \times b \times 170$

$\Rightarrow$ b = 1.3h.....(1)

The amount of fodder eaten by 10 horses and 8 bullocks in one day = 10h + 8b = 10h + 8(1.3h) = 20.4h

Time taken by them to eat the same amount of fodder = total fodder/amount eaten by them in one day

$= \frac{26 \times h \times 170}{20.4h}$

= 216.67 days

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Question 23

A boat covers 24 km upstream and 72 km downstream in 8 hours, while it covers 48 km upstream and 108 km downstream in 14 hours. Find the speed of the boat in still water and the speed of the stream respectively.

A 12 km/h, 6 km/h

B 10 km/h, 5 km/h

C 10 km/h, 6 km/h

D 12 km/h, 5km/h

Answer: A

Explanation:

Let the speed of the boat in still water be V and speed of the stream be V'.

Relative speed of boat in upstream = V - V', as water stream flows against the direction of boat.

whereas Relative speed of boat in downstream = V + V', as water stream flows in the direction of boat.

Case (1)

Given Total time taken = Time taken during upstream + Time taken during downstream = 8 hours.

$\Rightarrow \frac{24}{V-V'} + \frac{72}{V+V'} = 8$

$\Rightarrow 3[\frac{1}{V-V'} + \frac{3}{V+V'}] = 1$.....(1)

$\Rightarrow 3[4V - 2V'] = V^2 - V'^2$.....(2)

Case (2)

Given Total time taken = Time taken during upstream + Time taken during downstream = 14 hours

$\Rightarrow \frac{48}{V-V'} + \frac{108}{V+V'} = 14$

$\Rightarrow 6[\frac{4}{V-V'} + \frac{9}{V+V'}] = 7$

$\Rightarrow 6[13V - 5V'] = 7[V^2 - V'^2]$.....(3)

Dividing equation (3) by (2), we get

$\frac{2[13V-5V']}{4V-2V'} = 7$

$\Rightarrow 26V - 10V' = 28V - 14V'$

$\Rightarrow V = 2V'$

Substituting this value in equation (1) we get,

$\Rightarrow 3[\frac{1}{V'} + \frac{1}{V'}] = 1$

$\Rightarrow V' = 6$

$\Rightarrow V = 12$

Hence, Speed of the boat in still water = 12 km/h.

and Speed of the stream = 6 km/h.

Question 24

A shopkeeper sells rice at the cost price, but uses false weight. He gains 20% in this process. What weight does he uses for one kilogram?

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A $733\frac{1}{3}g$

B 750 g

C $833\frac{1}{3}g$

D 850 g

Answer: C

Explanation:

Let say cost price(C.P) of 1 kg(1000 g) of rice be Rs. 100

Given Shopkeeper is selling rice at cost price,

$\Rightarrow$ Selling price(S.P) = C.P = Rs. 100

If he had used correct weight of 1000 g then C.P would have also been Rs. 100.

But given that he uses false weight. Let the weight he had used be 'x' g.

For 1000 g of rice the C.P = Rs. 100

$\Rightarrow$ For '1' g of rice the C.P will be Rs. $\frac{1}{10}$

$\Rightarrow$ For 'x' g of rice the C.P will be Rs. $\frac{x}{10}$

Given that, by using this false weight the shop keeper gains 20%.

Gain percentage = $\frac{S.P-C.P}{C.P} \times 100$

$\Rightarrow \frac{20}{100} = \frac{S.P-C.P}{C.P}$

$\Rightarrow S.P = 1.2 \times C.P$

$\Rightarrow 100 = 1.2 \times \frac{x}{10}$

$\Rightarrow x = 833.33$

Hence the false weight used is 833.33 g

Question 25

Working together, Rakesh, Prakash and Ashok can finish the same job in an hour. Also, if Prakash works for an hour, and then Ashok works for four hours, the job will be completed. If Rakesh can do the job an hour quicker than Prakash, how many hours would Ashok take to complete the job alone?

A 3

B 4

C 2.5

D 6

Answer: D

Explanation:

Let the efficiencies of Rakesh, Prakash, and Ashok be 'r' 'p' and 'a' respectively.

GIven that Rakesh can do a job an hour quicker than Prakash.

So let time taken by Prakash be 't' hours, then time taken by Rakesh will be 't-1' hours.

Total work(W) = Efficiency $\times$ Time taken = p $\times$ t = r $\times$ (t-1)

$\Rightarrow$ t = $\frac{r}{r-p}$.....(1)

Given that, Working together, Rakesh, Prakash and Ashok can finish the same job in an hour.

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$\Rightarrow$ Total work(W) = (r+p+a) (1) units.....(2)

Also given that, if Prakash works for an hour, and then Ashok works for four hours, the job will be completed.

$\Rightarrow$ Total work(W) = p(1) + a(4) units.....(3)

Equating (2) and (3), we get

(r+p+a) (1) = p(1) + a(4)

$\Rightarrow$ r = 3a.....(4)

Substituting this value in equation (1), we get

t = $\frac{3a}{3a-p}$.....(5)

As the Total work is always constant, p $\times$ t = p(1) + a(4)

$\Rightarrow$ t = 1 + 4$\frac{a}{p}$.....(6)

Equating (5) and (6), we get

$\frac{3a}{3a-p} = 1 + 4\frac{a}{p}$

Let $\frac{a}{p}$ = 'k'

$\Rightarrow \frac{3k}{3k-1} = 1 + 4k$

$\Rightarrow 3k = 12k^2 + 3k - 4k - 1$

$\Rightarrow 12k^2 - 4k - 1 = 0$

Solving for k, we get k = $\frac{1}{2} or -\frac{1}{6}$ [which is not possible]

Hence k = $\frac{1}{2}$

$\Rightarrow$ p =2a.....(7)

Substituting (4) and (7) in equation (2) we get,

Total work(W) = 6a units.

Time taken by Ashok alone to do the job = Total work/ Efficiency of Ashok

= 6a/a

=6 hours.

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Reasoning

Instructions

For the following questions answer them individually

Question 26

Looking at Sweety, Raj says to his friend, "Sweety is the grand-daughter of the elder brother of my father". How is Sweety related to Raj?

A Niece

B Sister

C Aunt

D Sister-in-law

Answer: A

Explanation:

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Elder brother of Raj's father = Raj's uncle

Now, Sweety is grand-daughter of Raj's uncle.

=> Sweety is Raj's **niece**.

=> Ans - (A)

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Question 27

Seven experts N ,G, M, W, J, K and L give expert advice sessions to the XII class students. These sessions can take place either before the school, during lunch period or after the school. In scheduling these sessions the following conditions are followed.

At least two experts must hold the sessions before school.
At least three experts must hold their sessions after school.
M is not available after school and J is available only after school.
W always takes extra session during lunch.
G will take session before school only if N is also scheduled before school.

All the following statements could be true except:

A The same number of experts take sessions before school as after school

B The same number of experts take sessions before school as during lunch

C Twice as many experts take sessions after the school as before the school

D The same number of experts take sessions after school as during lunch

Answer: D

Explanation:
The minimum number of people taking classes after school is 3.

The minimum number of people taking classes before school is 2.

Hence the maximum number of people taking classes during lunch must be 2.

Hence the number of people taking classes during lunch and after school cannot be equal.

Option D is the correct answer.

Question 28

Six male friends A, B, C, D, E and F are married to R, S, U, V, T and W, not necessarily is same order.
Following facts are known about them:-
• R and S are A's sisters.
• Neither R nor T are wiv es of C.
• W is wife of E and V is wife of B .
• D is not married to R, S or T.
Who is A's wife?

A R

B U

C T

D Cannot be determined

Answer: C

Explanation:
To find : A's wife = ?

It is given that R and S are A's sisters.

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Also, W is wife of E and V is wife of B.

Thus, we have : (A,) (B,V) (C,) (D,) (EW)

Also, T is married neither to C nor to D, => T is wife of A.

=> Ans - (C)

Question 29

If southeast becomes east and northwest becomes west and all the other directions are changed in the same direction. Then what will be the direction for north?

A Northwest

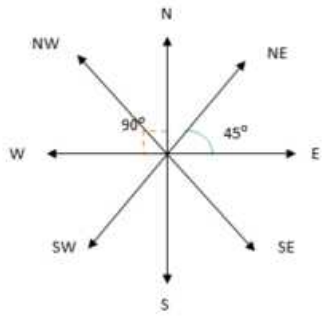
B Southeast

C Southwest

D Northeast

Answer: D

Explanation:



If southeast becomes east and northwest becomes west, thus we have to tilt the direction 45° clockwise. (to the right)

Thus, direction of north will be **northeast.**

=> Ans - (D)

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Question 30

Inspector arrested three persons- Kalia, Raza, Shera - on suspicion, in a theft case. It was found the one among these three was the thief. During the interrogation their replies were as follows.

Kalia: I am not the thief. Raza is the thief.
Raza: I am not the thief. Either Kalia or Sh era is the thief.
Shera: I am not the thief. Raza is not the thief.

If exactly one person among them always speaks the truth, another always speaks lies and the third alternates between the truth and lies, then who is the thief?

A Kalia

B Shera

C Raza

D Cannot be determined

Answer: C

Explanation:

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Case 1 : If Kalia speaks truth

=> Raza is the thief, which means Raza's first statement is a lie.

Case 1(a) : Raza speaks lie and truth alternatively.

=> Second statement cannot be true.

Case 1(b) : Raza always lies.

=> Raza is a thief, and the other ones are not.

This can only mean Shera speaks truth and lie alternatively, which positively concludes above statements.

∴ **Raza** is the thief.

=> Ans - (C)

Question 31

A, B, C and D are four medical representatives of a company. Each of them must visit exactly two of the eight cities- Delhi, Chennai , Kolkata, Hyderabad, Bangalore, Mumbai, Lucknow and Patna - and each city is visited by only one person. C does not visit Mumbai and Delhi, While D does not visit Kolkata and Hyderabad. B does not visit Lucknow and Patna. Whereas A does not visit Bangalore and Chennai. Patna and Bangalore are visited neither by B nor by C.
If Delhi and Lucknow were visited by A, then which one of the following cities could B visit?

A Delhi

B Bangalore

C Lucknow

D Mumbai

Answer: D

Explanation:
According to the statements,

	Delhi	Chennai	Kolkata	Hyderabad	Bangalore	Mumbai	Lucknow	Patna
A	√	X			X		√	
B					X		X	X
C	X				X	X		X
D			X	X				

If A visited Delhi and Lucknow, then B can only visit two of Chennai, Kolkata, Hyderabad or **Mumbai**.

=> Ans - (D)

Question 32

Among the five numbers W, Y, C, D, M. W is greater than C but less than M, whereas, Y is greater than D but not less than M. Which of the following can be the greatest of the five?

A D

B W

C C

D Y or M

Answer: D

Explanation:
W is greater than C but less than M, : M > W > C

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Y is greater than D but not less than M, : Y > D and Y $\geq$ M

Combining above statements, we get : Y $\geq$ M > W > C and Y > D

Thus, either **Y or M** is the greatest.

=> Ans - (D)

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Question 33

A tutor has 10 students - A, B, C, D, E, F, G, H, I and J- to form four groups for tutorials. No group can have more than four students. No two groups can have the same number of students. C and G must be in the same group. A and F must be in the same group. I should be alone and is in one group. B and E cannot be in the same roup. F and E must be in different groups.
If A, D, F and J form a group, then the other two groups can be:-

A C, G and B, E, H

B C, H, and B, E, G

C E, H and B, C, G

D None of these

Answer: C

Explanation:
No group can have more than four students. No two groups can have the same number of students.

=> The four groups will have 1,2,3,4 students respectively.

I should be alone and is in one group, => $G_1 = I$

Given : A, D, F and J form a group, => $G_4 = A, D, F, J$

Also, C and G must be in the same group. B and E cannot be in the same group.

=> B belongs with C and G, => $G_3 = B, C, G$

and $G_2 = E, H$

=> Ans - (C)

Question 34

A bookie has to inspect five horses A, B, C, D and E. If he inspects B, he cannot inspect C immediately. If he inspects A, he cannot go to E after that. Which of the following can be the correct order of his inspection?

A A, B, C, D, E

B D, B, C, E, A

C D, C, B, A, E

D D, C, B, E, A

Answer: D

Explanation:
If he inspects B, he cannot inspect C immediately, => C cannot be to the immediate right of B, and thus first two options are eliminated.

If he inspects A, he cannot go to E after that, similarly third option is also not possible.

Thus, proper order : **D,C,B,E,A**

=> Ans - (D)

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Question 35

Below given question contains six statements labelled A, B, C, D, E and F followed by four combinations of three statements. Choose the set in which the statements are logically related i.e the third statement can be deduced from the first two statements together.

Read the information carefully and answer the question.

A) All honest persons are good natured.
B) Some good natured persons are not honest.
C) Some honest persons are good natured.
D) All honest person are obese.
E) All obese person are good natured.
F) Some good natured person are hon est.

A ACD

B FAC

C BCF

D DEA

Answer: D

Explanation:
(A) : The two statements (A & C) are contradictory, hence it is invalid.

(B) : This also contain A and C, hence it is also invalid.

(C) : The statements are B and F are again contradictory, hence it is also invalid.

(D) : All honest person are obese, and all obese are good natured, hence all honest persons are good natured.

=> Ans - (D)

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Question 36

R1, R2, R3, R4, R5, R6, R7 are seven places on a map. The following places are connected by two-way roads: R1 and R2; R1 and R6; R3 and R6; R3 and R4; R6 and R7; R4 and R5; R2 and R3; R5 and R7. No other road exists. The shortest route (the route with the least number of intermediate places) from R1 to R7 is:-

A R1- R3- R7

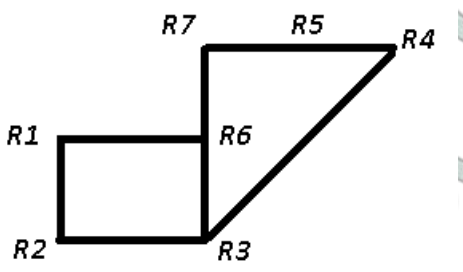
B R1- R5- R7

C R1- R2-R3- R6- R7

D R1- R6- R7

Answer: D

Explanation:
The road map when we connect all the 1-way roads is :



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Thus, the shortest route to go from R1 to R7 : **R1-R6-R7**

=> Ans - (D)

Question 37

A, B, C, D and E are five rods. E is longer than A which is longer than C and lighter than C, which is lighter than D. B is shorter than D, and heavier than it. E is longer than D, and heavier than it.
If B is the heaviest of all, then which of the following can be the lightest of all the five rods?

A E only

B A only

C E or A

D D or E

Answer: B

Explanation:
Comparing the rods on the basis of weight

A is lighter than C, which is lighter than D, : D > C > A

B is heavier than D, : B > D

E is heavier than D, : E > D

It is given that B is the heaviest, and combining above statements, we get : **B > E > D > C > A**

Thus, A is the shortest.

=> Ans - (B)

Question 38

A, B and C are three films that are screened by three theatres PVR, DT and Regal in three consecutive slots. No film should be screened in the same slot by any two theaters. If DT screens film B in the first slot and PVR exhibits film C in the third slot, then which of these must be TRUE?

A PVR screens A in the second slot.

B DT exhibits C in the third slot.

C Regal exhibits A in the second slot.

D Regal exhibits C in third slot.

Answer: C

Explanation:
DT screens film B in the first slot and PVR exhibits film C in the third slot

This means only Regal can exhibit the remaining film A in the remaining slot, i.e. second slot.

=> Ans - (C)

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Question 39

Five capitals A, B, C, D and E are connected by different modes of transport as follows.
A and B are connected by boat as well as by rail.
D and C are connected by bus and by boat.
B and E are connected only by air.
A and C are connected only by boa t.
E and C are connected by rail and by bus.
Which of the following pair of capitals are connected by any of the routes directly (without going through any other capital)?

A A and E

B E and D

C B and C

D None of the pairs in the choices are directly connected

Answer: D

Question 40

Insert the missing character.

EJO	80	TYE
DHL	84	PTX
CFI	?	LOR

A 63

B 82

C 88

D 45

Answer: A

Explanation:
The middle number is the sum of numbers assigned to their adjacent alphabets as, A=1, B=2, C=3,.....,Z=26

EJO + TYE $\equiv 5 + 10 + 15 + 20 + 25 + 5 = 80$

DHL + PTX $\equiv 4 + 8 + 12 + 16 + 20 + 24 = 84$

Similarly, CFI + LOR $\equiv 3 + 6 + 9 + 12 + 15 + 18 = 63$

=> Ans - (A)

Question 41

P, Q, R, S and T are the five corners of a table with five sides. Chairs A, B, C, D and E are placed along the sides joining the angular corners. Neither P, Q, R, S, T nor A, B, C, D and E are necessarily in that order. Chair A is along the side joining the corner P and R. S is to the immediate right of P, and R is between P and T. Chair B is along the side of Q and T. Chairs D and E are next to B on either side. The corners that join the side where the chair C is placed are:-

A P and R

B S and Q

C S and T

D P and S

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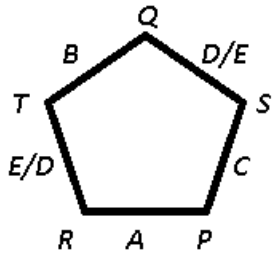
Answer: D

Explanation:
Chair A is along the side joining the corner P and R. S is to the immediate right of P, => R is to the left of P.

R is between P and T, => Q is to the immediate right of S.

Chair B is along the side of Q and T. Chairs D and E are next to B on either side. => C is to the immediate right of A.



Thus, the corners that join the side where the chair C is placed are : **P and S.**

=> Ans - (D)

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Question 42

Eight persons Jai, Kabir, Lakshaya, Mannu, Neetu, Om, Punita and Surbhi sit in two parallel rows with four seats in each row facing each other. Jai and Kabir are not in the same row. Neetu sits to the immediate left of Lakshaya in the same row but opposite to Om. Punita and Kabir have only two persons between them. Jai and Neetu have only one person between them.
Which of these pairs of persons can sit diagonally opposite each other?

A a) Surbhi and Mannu or Om and Punita

B b) Neetu and Jai or Jai and Lakshaya

C c) Jai and Kabir or Punita and Lakshaya

D d) Either (a) or (b)

Answer: C

Question 43

A, B, C, D, E, F, G, H and I are nine employees in a company, who go to meet two managers Ram and Deepak to talk to them about their Paris project. Each manager has time for only three employees. D has a priority and must be given preference by Ram or Deepak. F and B do not wish to go to the same manager. G goes to Ram only and H goes to Deepak only. C comes back saying that neither of the two managers has time to see him. A does not go with F and I does not go with E. B and I do not go together. If E, F and G go together and are seen by one of the managers, then which manager sees whom, assuming that C has opted out of the talks?

A Deepak - D, I, H or D, B, H

B Deepak - D, E, H or D, B, H

C Ram - A, I, H or N, I, H

D Ram - D, I, H or A, I, H

Answer: A

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Question 44

There are three boxes of three different colours- Green, Blue and Red, and 6 toys of which 2 are of Green colour, 2 are of Blue colour and 2 are of Red colour. The toys are packed in the three boxes such that each box has 2 toys of different colours in it and also the colour of the box is different from the colour of the toys packed in it. Now, 10 chocolates are kept in these boxes in such a way that the Green box has the maximum possible chocolates in it whereas, the Red box has the least possible chocolates in it. Each box should have at least one chocolate and no two boxes have the same number of chocolates.
Which of the following is true?

A The Green box, the Blue box and Red box have 6, 3 and 1 chocolate /s in them respectively

B The box which has the toys of Red and Blue colors has 8 chocolates in it.

C The box which has the toys of Blue and Green colors has 3 chocolates in it.

D The box which has the toys of Green and Red colors has 2 chocolates in it.

Answer: D

Explanation:
Given that there are 3 boxes of green blue red colours

According to the given condition,that the box color toy is not present in respective box,

green box has blue and red toys

Blue box has Green and red toys

Red box has Green and blue toy

There are 10 chocolates The least number of chocolates are in red box. Given that atleast one chocolate in red box

and maximum possible number of chocolates in Green box

that is 7 is the maximum number of chocolates because 2 chocolates are kept in blue box.

Therefore, option D is correct that is the box which has green and red toys has 2 chocolates. such box is Blue box which has 2 chocolates in it.

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Question 45

A, B, C are three girls who go to buy six items- P, Q, R, S, T and U. Each one of them buys two different items in such a way that if A buys R, then B buys neither P nor S. If B buys Q, then C buys neither U nor T. If A buys R and T, then B buys:-

A P and S

B Q and U

C P and Q

D S and U

Answer: B

Explanation:
Given : If A buys R, then B does not but *P or S.*

Now A buys R and T, then B cannot buy P and S, thus the only two items left for him to buy are **Q and U.**

=> Ans - (B)

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Question 46

Below given question has a main statement followed by four statements labeled A, B, C and D. Choose the ordered pair of statements, where the first statement implies the second and the two statements are logically consistent with the main statement.
You cannot catch the bus unless it is morning.
(A) This is morning.
(B) You can catch the bus.
(C) This is not morning.
(D) You cannot catch the bus.

A BD

B AC

C CB

D CD

Answer: D

Explanation:
(A) : The statements are clearly contradictory, hence it is invalid.

(B) : Again the statements, this is morning and this is not morning are invalid.

(C) : The order CB is not logically consistent with the given statement.

(D) : This order is valid, and states this is not morning, hence you cannot catch the bus.

=> Ans - (D)

Question 47

If m + n means m is sister of n,
m - n means m is brother of n,
m x n means m is daughter of n,
m ÷ n means m is mother of n,
How many females can be shown by the given relationship?

$a + b - c + d - e \times f$

A 2

B 3

C 4

D Cannot be determined

Answer: D

Explanation:
a+b: a is the sister of b
b-c: b is the brother of c
c+d: c is the sister of d
d-e : d is the brother of e
e*f: e is the daughter of f.
We can state that a(female), b(male),c(female), d(male), e (female), f(male or female).
Hence D is the correct answer.

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Question 48

Three coins are tossed in the air and two of the coins land with tails face upwards. What are the chances on the next toss of the coins that at least two of the coins will land with the tails facing upwards?

A 50%

B 25%

C 75%

D 100%

Answer: A

Explanation:
Three coins are tossed in the air and two of the coins land with tails face upwards.

Assuming that the coins are fair and the first part does not try to indicate that they are not fair. The outcomes that make at least two coins heads are :

HHT, HHH, HTH, THH

Thus, outcome is 4 out of 8 = 50%

=> Ans - (A)

Question 49

A family of three generation comprises of seven members - A, B, C, D, E, F and G. There are two married couples-one each of first and second generation respectively. They travel in three different cars -Audi, BMW and Honda so that no car has more than three members and there is at least one female in each car. C, who is a grand-daughter, does not travel with her grandfather and grandmother. B travels with his father E in BMW. F travels with her grand-daughter D in Audi. A travels with her daughter in Honda. Which of the following is one of the married couples?

A DB

B BC

C EF

D Cannot be determined

Answer: C

Question 50

P, Q, R, S, T and U are six members of a family. R is not the mother of Q but Q is the son of R. P and R are a married couple. T is the brother of R. U is the brother of Q. S is the daughter of P.
T is S 's _____.

A Uncle

B Mother

C Brother

D Father

Answer: A

Explanation:
R is not the mother of Q but Q is the son of R

=> R is father of Q

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P and R are a married couple

=> P(f) is wife of R(m), and Q(m) is their son.

U is the brother of Q. S is the daughter of P

=> Q(m), U(m) and S(f) are siblings and children of P(f) and R(m).

Also, T is the brother of R

∴ T is S's **uncle.**

=> Ans - (A)

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Verbal

Instructions

Read the passage carefully and answer the question that follows.

Passage I

All of us play but we are not athletes. We are homo ludens (Latin for play) and our playfulness is unproductive. But athletes play for profit and contest for prizes. It is the transformation of our play and games into athletics that leads to medals. What makes Haryana such a fine place for athletics in India? With barely 2% of India's population, people from Haryana won around 40% of the gold medals in the recently concluded CWG 2010.

People in Haryana tend to count the gold medals of the Hyderabadi shuttler, Saina Nehwal and the Delhi wrestler, Sushil Kumar, in their tally. This is because both of them are Jats. People of this dominant caste form more than 20% of Haryana's population and, therefore, in popular perception, Haryana is Jat-land. All sports are oriented towards the Olympic slogan 'higher, faster, and stronger'. But the ones in which Haryana got medals stand for plain force and aggression like wrestling, boxing and shooting. Anthropologists call them contact sports because the opponents have bodily contact in them. Shooting is a combative sport because opponents use a combat weapon. Such sports are a substitute of war or training for it.

Haryana is India's pride in contact and combative games. I can think of t hree reasons for it, viz. historical geography, peasant culture of perseverance and a feeble government policy. Firstly, the province has a volatile history of continuous aggression due to its geographical location on the frontier. Secondly, the people of Haryana have valued physical strength and perseverance due to its peasant culture. Thirdly, the sports policy since 2006 has honed the killer athletic spirit in Haryana. The half-hearted policy does not create achievers but supports the successful ones among them. Punjab was divided on religious lines in 1947. The non-Sikh majority parts of this truncated Punjab were constituted as Haryana in 1966. Like a horseshoe, Haryana encircles Delhi from three sides and the culture of both is similar. At the popular level, people are rough and tough - meaning 'rough by tongue and tough in body'. In the medieval times, Haryana flourished when weak rulers ruled Delhi.

Most of the area remained under Delhi's tutelage but small principalities also dotted the arid landscape of Haryana. Mostly, people of the region joined the Mughals and Marathas in repulsing invaders. But the same locals did not mind plundering Delhi or looting the retreating armies sometimes. The British colonialists expanded from the east. They conquered most of India with the help of soldiers from western UP and Bihar. But, in the late 19th century, the colonial strategists honored ordinary peasant castes by calling them 'martial races' in united Punjab. This was a clever way of taming the aggression in this frontier region.

This smart move was also to recruit rural Punjabis in the colonial army so that they could be used to thwart the southward expansion of Tsarist Russia. There is a family resemblance between military/hunting activities and wrestling, shooting, races, riding or archery. For the military serving population of Haryana, therefore, such sports come easily. Secondly, before the advent of machinery, agriculture was a backbreaking occupation. The size of agricultural income had a direct relation with the quantity of sweat produced during one's toil.

Question 51

Why do people of Haryana tend to count the medals bagged by Saina Nehwal in the tally of their own state, though she is a Hyderabadi?

A Her father played Ranji for Haryana and is quite popular in the state

B Saina's coach whom she attributes her success to, is from Haryana

C Her father was posted for 12 years in Haryana during his professional career as a government officer

D Her caste is the same as a dominant caste from Haryana

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Answer: D

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Question 52

What does the author means by saying “Our Playfulness is unproductive"?

A Investing time in sports do not reap the expected benefits

B Majority of us waste time on games and sports

C Majority of us do not play to achieve material benefits

D Majority of us do not have what it takes to become an athlete

Answer: C

Question 53

Which of these is not a reason for so many athletes coming from Haryana?

A Government sponsored schemes in primary schools

B Haryana is traditionally peasant community

C Many people from Haryana had been in army

D Haryana has traditionally seen regular aggressions

Answer: A

Question 54

Why did the English call the ordinary peasants of Haryana, the 'martial race'?

A Because they could never conquer them

B Because they have traditionally the rulers of Delhi and neighboring areas

C To tame the aggression of people of that region

D They had the largest standing army of that region

Answer: C

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Question 55

Which of the following is false according to the passage?

A Haryana Surrounds Delhi from three sides

B Haryana flourished when Delhi was ruled by weak rulers

C The state sports policy has failed to create new achievers

D Shooting is a collective sports as all players have to play simultaneously

Answer: D

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Question 56

Which of the following is true about the prevailing sports policy in Haryana?

A 1) Much credit goes to the sports policy as it helps identify and nurture young talents

B 2) The current state policy does not create new breed of athletes but it instead award the one's who have excelled

C 3) Neither (1) nor (2)

D 4) Both (1) and (2)

Answer: B

Instructions

Read the passage carefully and answer the question that follows.
Passage II
Putting a final lid on the Planning era, the Niti Aayog is gearing up to launch the three-year action plan from April 1 after the end of 12th Five Year Plan on March 31.
Under the new system, sources said states will be enc ouraged to meet the targets of various schemes or face the prospects of drying up of the fund flows.
"The 12th five years plan is coming to an e nd on March 31. The three-year action plan to be unveiled this month will come in force from April 1, which will also end the prevailing system of the centre patiently waiting (for) the state governments to implement the schemes.
"Now, you either meet the target or you will fa ce the prospects of the fund flow drying up," a senior Niti Aayog official said.
The official said ,"We have patiently waited for the state governments to adopt a number of reform oriented legislative bills. But our experiences have largely been negative... therefore, the reform agenda arrived at after consensus will need to be adopted by them, and the states doing so will get incentives".
Niti Aayog has also been entrusted the work on the 15-year Vision Document and a seve n year strategy, which would guide the government's development works till 2030.

Question 57

As compared to the previous Five Year Plans, the new NITI Aayog's stance towards the states is:

A Easy flow of funds for states

B More funds for states

C Lesser regulation of funds for states

D Performance based regulation of funds

Answer: D

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Question 58

How has the experience of dealing with the states been so far?

A Satisfactory but can still be improved

B Extremely good results

C Mostly negative

D Mixed results

Answer: C

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Question 59

What is the theme of this passage?

A Center State relationship

B Growing corruption in India

C Infrastructure development in India

D All of these

Answer: A

Instructions

Read the passage carefully and answer the question that follows.
Passage III
Twenty years ago on Thursday, Moscow started what it thought would be a "blitzkrieg" against secular separatists in Chechnya, a tiny, oil-rich province in Russia's North Caucasus region that had declared its independence.

But the first Chechen war became Russia's Vietnam; the second war was declared a victory only in 2009. The two conflicts have reshaped Russia, Chechnya, their rulers - and those who oppose them. In 1994, shortly after Moscow invaded Chechnya in an effort to restore its territorial integrity, Akhmad Kadyrov, a bearded, barrel-chested Muslim scholar turned guerrilla commander, declared jihad on all Russians and said each Chechen should kill at least 150 of them.

That was the proportion of the populations on each side of the conflict: some 150 million Russians and less than a million Chechens in a small, landlocked province, which the separatists wanted to carve out of Russia. Western media and politicians dubbed the Chechens "freedom fighters" - an army of Davids fighting the Russian Goliath.

Moscow was lambasted internationally for disproportionate use of force and rolling back on the democratic freedoms that former leader Boris Yeltsin was so eager to introduce after the 1991 Soviet Union collapse. Tens of thousands died amid atrocities committed by both sides - and many more were displaced before 1996, when the Russians retreated, leaving Chechnya essentially independent. Retreating was a humiliation for Russia's military machine that less than a decade earlier had presented a seemingly formidable threat to the entire Western world.

Question 60

Why did Russia declare war against Chechnya?

A Chechnya became training field for terrorists

B Chechnya waged a civil war against its own citizens

C Chechnya was supplying arms to Russia's enemies

D Chechnya had declared independence

Answer: D

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Question 61

How did the first Russia Chechnya war come to an end?

A Russia surrendered

B Chechnya surrendered

C Russia retreated

D Chechnya retreated

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Answer: C

Explanation:
In the last paragraph it has been mentioned that retreating was such a humiliating experience for the Russians.

Hence it can be inferred that the Russian military retreated. Option C is the correct answer.

Question 62

What was western media's attitude about the conflict?

A They supported Russian action against Chechnya

B They completely ignored the conflict

C They were sympathetic towards Chechens

D They acted as mediators between the two warring nations

Answer: C

Instructions

Read the passage carefully and answer the question that follows.
Passage IV
Smokejumpers are often asked to address to organizations and the public groups about the importance of fire protection, particularly fire deterrence and detection. Because smoke detectors reduce the risk of dying in a fire by half, smokejumpers often provide audiences with information on how to fix these protective devices in their homes. Specifically, they tell them these things: A smoke detector should be placed on each floor of a home. While sleeping, people are in particular risk of a surfacing fire, and there must be a detector outside each sleeping area. A good site for a detector would be a hallway that runs between living spaces and bedrooms. Because of the dead-air space that might be missed by turbulent hot air bouncing around above a fire, smoke detectors should be installed either on the ceiling at least four inches from the adjoining wall, or high on a wall at least four, but no further than twelve, inches from the ceiling. Detectors should not be mounted near windows, exterior doors, or other places where drafts might direct the smoke away from the unit. Nor should they be placed in kitchens and garages, where cooking and gas fumes are likely to cause bogus alarms.

Question 63

What is the main focus of this passage?

A How smokejumpers carry out their errands

B The proper installation of home smoke detectors

C The concealment of dead-air space on walls and ceilings

D How smoke detectors thwart fires in homes

Answer: B

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Question 64

The passage states that, compared with people who do not have smoke detectors, persons who live in homes with smoke detectors have a:-

A 50% better chance of surviving a fire.

B 50% poorer chances of preventing a fire

C 75% worse chance of detecting a hidden fire.

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D 100% shoddier chance of being injured in a fire.

Answer: A

Question 65

The passage indicates that one responsibility of smokejumpers is to:-

A Install smoke detectors in the homes of residents in the community.

B Check homes to see if smoke detectors have been properly installed.

C Develop fire safety programs for public leaders and corporate workers.

D Address to corporate about the importance of preventing fires.

Answer: D

Instructions
For the following questions answer them individually

Question 66

Choose the word or the phrase that has most nearly the opposite meaning for the word given below.
DORMANT

A Couchant

B Rampant

C Potent

D Prostrate

Answer: B

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Question 67

Choose the word or the phrase that has most nearly the opposite meaning for the word given below.
EXIGUOUS

A Urgent

B Exacting

C Large

D Bare

Answer: C

Question 68

Complete the analogy.
SOAP : RINSE :: _____

A Scrubber : absorb

B Immorality : expiate

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C Iron : rust

D Cleanser : dirty linen

Answer: A

Question 69

Choose the option that represents the correct arrangement of the following words to form a meaningful sentence.
1. developing
2. Nina enters and apologizes
3. as
4. ,
5. is
6. later
7. her self-portraits
8. she
9. in her darkroom
10. for running away

A 6, 4, 3, 8, 5, 1, 7, 9, 2, 10

B 2, 10, 3, 8, 7, 1, 6, 5, 4, 9

C 8, 4, 3, 2, 5, 1, 7, 9, 2, 10

D 8, 6, 5, 1, 7, 9, 3, 4, 2, 10

Answer: A

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Question 70

The following question has a set of three statements. Each statement can be classified as one of the following.

(i) Facts, which deal with pieces of information that one has heard, seen or read, and which are open to discovery or verification (the answer option indicates such a statement with an 'F').

(ii) Inferences, which are conclusions drawn about the unknown, on the basis of the known (the answer option indicates such a statement with an 'I').

(iii) Judgements, which are opinions th at imply approval or disapproval of persons, objects, situations and occurrences in the past, the present or the future (the answer option indicates such a statement with a 'J').

Identify the Fact(F), Judgement(J) and Inference(I) from the given sentences

1) "I don't see Ritu. She said she was tired, so she must have gone home to bed."
2) "Ram's been at the gym a lot; he must be trying to lose weight."
3) "Shera is a dog, and all dogs love belly rubs. So Shera must love belly rubs."

A 1I, 2I, 3J

B 1I, 2I, 3I

C 1F, 2F, 3J

D 1J, 2J, 3F

Answer: B

Question 71

Which of the following idiom/ phrase means 'like a spy'?

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A Cloak and dagger

B Forty winks

C The alpha and the omega

D Lay bare

Answer: A

Question 72

From the options give below, find the closest substitute for the underlined expression.
It is not surprising for a teenager who stays from school without good reason to invent fantastic tales to escape punishment.

A Delinquent

B Lazy teen

C Truant

D Idler

Answer: C

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Question 73

From the options given below, fill in the blank with the word/phrase that most appropriately completes the following sentence.
The Supreme Court _____ the decree of the lower court.

A Set by

B Set against

C Set aside

D Set over

Answer: C

Question 74

A word and its definition is given followed by four sentences. Choose the option that best fits with the definition.
Evanescent:

A A dew sparkling in the sunlight

B A corpse in the funeral pyre

C Rainbow on a rainy day

D Passing clouds on a clear sky

Answer: C

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Question 75

There are four sentences given below labelled (1-4). From the options given, choose the option that states the grammatically correct sentence(s).
When a magnifying glass was used, the cell appeared green. (1)
Under a magnifying glass, the cell appeared green. (2)
When a large catch of fish was desired, a seine was hauled through the water. (3)
When a seine was hauled through the water, many fish were caught. (4)

A 1 & 2

B 3 & 4

C 1, 2 & 4

D 1, 2, 3 & 4

Answer: D

Explanation:
Option A and Option B have the same meaning and both are gramatically correct.
In case of Option C and Option D, the cause and effect has been reversed while the sentences are gramatically correct.
Even though cause and effect have been reversed, both sentences make logical sense independently.
i.e. when there was an intent to catch lots of fish, seine(fishing net) was hauled(spread across)
And when a seine was spread across, many fish were caught.
Hence, All sentences are gramatically and logically correct.
Hence, the right option is D.

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General Awareness

Instructions
For the following questions answer them individually

Question 76

Chennai has been included in the UNESCO Creative Cities Network for its rich _____ tradition.

A Crafts and folk art

B Films and literature

C Media arts

D Musical

Answer: D

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Question 77

Pandit Bhimsen Gururaj Joshi was the famous Indian vocalist in which of the following the classical tradition?

A Hindustani

B Dhrupad

C Carnatic

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D Quwwali

Answer: A

Question 78

Which is the most spoken among the North Munda Group of Languages?

A Sindhi

B Santhali

C Assamese

D Dogri

Answer: B

Question 79

What is the motif of Rs 200 bank note?

A Red Fort

B Hampi with chariot

C Sanchi stupa

D Parliament House

Answer: C

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Question 80

Which of the following is true about Atal Pension Yojana (APY)?

A (a) It aims at increasing the number of people covered under any kind of pension scheme. It is one of the three Jan Suraksha schemes

B (b) It especially targeted the private unorganized sector and citizens between the ages of 18 to 40 years

C (c) The scheme also provides a monthly pension of Rs 5000 to Rs. 10000 per month based on the contributions made by the beneficiary

D (d) Only (a) and (b)

Answer: D

Question 81

Which of the following are Plant decomposers?

A Both snail and fungi

B Animalia

C Protista

D Snail

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Answer: A

Question 82

Ayodhya used to be the capital of which ancient kingdom?

A Kosala Kingdom

B Raghu Kingdom

C Treta Kingdom

D Saketa Kingdom

Answer: A

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Question 83

Which of the following is/are tributaries of Ganges in India?

A Sone river

B Yamuna

C Gomti

D All of these

Answer: D

Question 84

Dance patterns considered sacred to Lord Shiva are in:-

A Bharatanatyam and Kathakali

B Only Bharatanatyam

C Bharatanatyam and Mohiniyattam

D Only Mohiniyattam

Answer: C

Question 85

Gayatri mantra, the highly revered mantra is from which of the following?

A Rigveda

B Samaveda

C Upnishad

D Aitareya Brahmana

Answer: A

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Question 86

UIDAI comes under:-

A Niti Aayog

B Home Ministry

C Ministry of Electronics and Information Technology

D Ministry of Statistics and Programme Implementation

Answer: C

Question 87

Who amongst the following repudiated his knighthood in protest against Jallianwala Bagh tragedy?

A Rabindranath Tagore

B Subbaiyer Subramania Iyer

C Mahatama Gandhi

D Sardar Patel

Answer: A

Question 88

Telangana is bordered by which of the following states?

A Maharashtra, Karnataka, and Andhra Pradesh

B Chhattisgarh, Karnataka, and Andhra Pradesh

C Karnataka, and Andhra Pradesh

D Maharashtra, Chhattisgarh, Karnataka, and Andhra Pradesh

Answer: D

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Question 89

Which one of the following is the best description of 'Google Station'?

A It is a research and development project being developed by Google with the mission of providing free internet access to rural and remote areas

B A public Wi-Fi platform

C A Wi-Fi platform for personal vehicles

D A free Wi- Fi for army locations

Answer: B

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Question 90

The term 'Big Data', refers to

A Computer-based systems that do things in the technical world

B The practice of using a network of remote servers hosted on the Internet to store data

C Industrial uses of Internet of things

D Large amount of information that is generated as trails or by-products of online and offline activities

Answer: D

Question 91

Who is called a Classified Service Voter?

A Service voters employed under intelligence agencies

B A service voter who opts for voting through a proxy voter duly appointed by him/her

C Service Voters employed by intelligence and Indian diplomatic missions

D Proxy of the service voter

Answer: B

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Question 92

_____ is used in Boxing.

A Upper Cut

B Mallet

C Bunder Chuckker

D Deuce

Answer: A

Question 93

Activities prohibited in eco-sensitive zones are:-
1) Flying over protected areas in an aircraft or hot air balloon
2) Major hydro-power projects
3) Setting up of hotels and reso rts
4) Setting of saw mills

A 2, 3

B 2, 3, 4

C 1, 2, 4

D All of these

Answer: C

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Question 94

Which of the following marketable products are available from bee keeping?
1) Propolis
2) Royal jel ly
3) Venom

A 1, 2

B 2, 3

C 1, 3

D All of these

Answer: D

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Question 95

Which of the following articles is omitted due to the GST Constitutional Amendment Bill?

A 270A

B 250A

C 269A

D 268A

Answer: D

Question 96

The below given image is of which of the following:

A Terracotta warriors

B Venus of Willendorf

C Laocoön and his sons

D Auguste Rodin, the burghers of Calais

Answer: A

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Question 97

Which of the following is true for wires of the same material and diameter?

A As compared to short wires, long wires have more resistance.

B As compared to short wires, long wires have no resistance.

C As compared to short wires, long wires have less resistance.

D As compared to short wires, long wires have same resistance.

Answer: A

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Question 98

Jana, a Boston based start-up, offers which of the following services?

A Free unrestricted accounts like twitter

B Free unrestricted Films and TV shows

C Free unrestricted internet access

D Free unrestricted social media services

Answer: C

Question 99

Second Generation Ethanol is prepared from:-

A Plastic waste

B Agricultural Waste

C Animal waste

D Non degradable waste

Answer: B

Question 100

Which of the following statement/s is/are correct regarding 'Zika disease'?
1. Zika virus disease is transmitted primarily by Aedes mosquitoes.
2. Till date no vaccine or medicine has been proven effective agains t Zika disease.
3. Mild fever, skin rash, muscle and joint pain are some of the symptoms of the zik a virus disease.

A 1 only

B 2 and 3 only

C 1 and 3 only

D 1, 2 and 3

Answer: D

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