Directions of Test

Test Name	LPU CA 02 - 03 (A)	Total Questions	30	Total Time	50 Mins

Section Name	No. of Questions	Time limit	Marks per Question	Negative Marking
Section 1	6	0:10(h:m)	1	1/4
Section 2	6	0:10(h:m)	1	1/4
Section 3	6	0:10(h:m)	1	1/4
Section 4	6	0:10(h:m)	1	1/4
Section 5	6	0:10(h:m)	1	1/4

Section : Section 1

QNo:- 1 ,Correct Answer:- *D*

Explanation:- *Let Rashi's age at the time of marriage = x*
According to the question:
(5/4)x – x = 8
x = 32
Present age of Rashi = 32 + 8 = 40 years
Present age of her daughter = 40/8 = 5 years
Required sum = 40 + 5 = 45 years

QNo:- 2 ,Correct Answer:- *A*

Explanation:- *Given, B = 5/6 A_____(1)*
C = D = 9/10 B_____(2)
Also, B = 2/3 E_____(3)
E – A = 3_____(4)
From (1) and (3), we get
A/E = 4/5 or E = (5/4) A_____(5)
E – A = 5A/4 – A
From (4) and (5), we get
A = 12 and E = 15 and B = 10
Also, C = D = 9 and F = 11, Since, B < F < A and F is an integer
A : F = 12:11

QNo:- 3 ,Correct Answer:- D

Explanation:- Let the present age of Mukesh is 'x' years then the present age of Gagan will be 'x + 5' and the present age of their father will be 2(x + x + 5) = '4x + 10' years
The age of Gagan at the time of Mukesh's birth will be x + 5 – x = 5 years while the age of father will be 4x + 10 – x = 3x + 10 years
According to the question:
3x + 10 = 5 × 8
x = 10 years
x + 5 = 15 years
4x + 10 = 50 years
Required sum = 10 + 15 + 50 = 75

QNo:- 4 ,Correct Answer:- A

Explanation:- Let the present age of Raman = 'x'
Present age of his son = x/3 and present age of his father = 5x/2
According to the question,
x + x/3 + 5x/2 = 46 × 3
On solving, we get x = 36 years
Age of son = 36/3 = 12 years
Age of father = 36 × 5/2 = 90 years
Required ratio = 12 : 90 = 2:15

QNo:- 5 ,Correct Answer:- D

Explanation:- The total of the ages of all the time of marriage of the daughter = 3 × 42 = 126 years
When the child of the son become 5 years old then there are five members in the family. The total age of these five = 5 × 36 = 180 years
If the age of daughter in law as 'x' years at the time of marriage then,
126 + x + 6 × 4 + 5 = 180
x = 180 – 126 – 24 – 5 = 25 years

QNo:- 6 ,Correct Answer:- B

Explanation:- The sum of the ages of all three sons after 8 years = x + 24
According to the question,
4x + 8 = 2(x + 24)
2x = 40
4x = 80 = the age of the father

Section : Section 2

QNo:- 7 ,Correct Answer:- D

Explanation:- Let the shares of A,B,C, and their mother be 3x,3x,3x,4x
According to question
4x-3x=5000
⇒ x = 5000
⇒ 3x+3x+3x=45000

QNo:- 8 ,Correct Answer:- B

Explanation:- The question can be answered directly by ratio itself
Sum of 1^{st} and 2^{nd} will be 5x
And 3^{rd} will be 4x
Acc to Question, we have to make 5x=4x, and therefore we have to reduce it by X. % reduction = (x/5x)*100 = 20%

QNo:- 9 ,Correct Answer:- C

Explanation:- Let the number of coins be
2x (50p coins)
5x (25p coin)
10x (10p coin)
Now amount due to 50p coins in Rs = 2x X 1/2 (50p = Rs1/2)
Now amount due to 25p coins in Rs = 5x X 1/4
Now amount due to 10p coins in Rs = 10x X 1/10
total amount = Rs52
(2x X 1/2) + (5x X 1/4) + (10x X 1/10) = 52
Solve for x and get x = 16
number of 25p coins = 5x = 5 X 16 = 80

QNo:- 10 ,Correct Answer:- C

Explanation:- Let B's share = x
A's share = x+20
C's share = A+20 = x +20+20 = x+40

ATQ x+x+20+x+40 = 120
3x = 60
X = 20

QNo:- 11 ,Correct Answer:- C

Explanation:- Let total wealth be x
wife gets = x/3
First son will get = (2x/3) * (2/10) = 48000
total wealth = 360000

QNo:- 12 ,Correct Answer:- C

Explanation:- Let the students be 2x, 3x, 5x. As 20 in each batch increased
⇒ 2x + 3x + 5x + 60 = 4x + 5x + 7x
⇒ x = 10
∴ No. of students originally = 2 × 10 + 3 × 10 + 5 × 10
= 20 + 30 + 50
= 100

Hence option C.

Section : Section 3

QNo:- 13 ,Correct Answer:- A

Explanation:- Profit share ratio Amar : Prabash
45000 × 12 : 30000 × 6
= 3 : 1

QNo:- 14 ,Correct Answer:- A

Explanation:- Let P is investment of Rakesh and Q is the investment of Ramesh.
So according to the question P = Q - Q/8
So 8P=7Q
So P:Q = 7:8
So If P= 140000
Q= 160000

QNo:- 15 ,Correct Answer:- A

Explanation:- Let's check the answer options:
1. 48, ratio is 1:2, Required Difference = 84 – 48 = 36, satisfies
2. 36, ratio is 1:2, Required Difference = 63 – 36 = 27, doesn't satisfies
3. 24, ratio is 1:2, Required Difference = 42 – 24 = 18, doesn't satisfies
4. 42, ratio is 2:1, doesn't satisfies

QNo:- 16 ,Correct Answer:- C

Explanation:-
Total equivalent capital of A = 5y ×12 + 8y × 12= Rs. 156y
Total equivalent capital of B = 6y×24 = Rs. 144y.
Total equivalent capital of C = 8y×12 + 4y× 12= Rs. 144y.
Therefore required ratio= A : B : C = 156y : 144y : 144y = 13 : 12 : 12

QNo:- 17 ,Correct Answer:- C

Explanation:-
Let the total capital is 6 and time is also 6 years.
A invests 1 for 1 year.
B invests 2 for 2 years
Then, C invests 6 – (1 + 2) = 3 for 6 years.
As it is compound patnership , profits are divided in the ratio, investment×time
The ratio of investment×time is A : B : C = 1 : 4 : 18
If total profit is 2300 then A's share
= 1/23×115000 = 5000.

QNo:- 18 ,Correct Answer:- C

Explanation:-
4A = 6B = 11C = k. Now k/4 : k/6 : k/11= 66:44:24 = 33:22:12.

Section : Section 4

QNo:- 19 ,Correct Answer:- C

Explanation:- X Y
80% 37.5%
40%
2.5 40
X : Y = 1:16

QNo:- 20 ,Correct Answer:- A

Explanation:- Quantity of milk in first container = 2/3
Quantity of water in first container = 1/3
∴ Ratio of milk and water in first container = 2:1
Similarly, ratio of milk and water in 2nd container = 2:3

$$\text{Quantity of milk in third container} = \frac{2}{3}+\frac{2}{5}=\frac{16}{15}$$

$$\text{Quantity of water in third container} = \frac{1}{3}+\frac{3}{5}=\frac{14}{15}$$

$$\therefore \text{Ratio of milk and water in third container} = \frac{16}{15}:\frac{14}{15}=8:7.$$

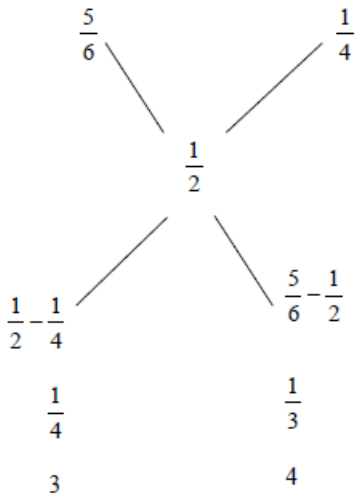
QNo:- 21 ,Correct Answer:- A

Explanation:- Resultant solution's concentration

$$=\left(\frac{5}{12}\times\frac{21}{100}+\frac{2}{12}\times\frac{50}{100}+\frac{5}{12}\times\frac{13}{100}\right)\times 100\%$$

$$=\frac{105+100+65}{1200}\times 100=\frac{270}{12}=22.5\%$$

QNo:- 22 ,Correct Answer:- *D*



Explanation:-

Liquid A in containers 1 = $\frac{5}{6}$

Liquid A in Containers 2 = $\frac{1}{4}$

Liquid A in Final mixture = $\frac{1}{2}$

Using Alligation required ratio = 3:4

QNo:- 23 ,Correct Answer:- *C*

Explanation:-
Let the first type X and second type by Y. So 60X + 90Y = 80 (X + Y) =>10Y = 20X.
Solving X/Y = 1/2
Option C

QNo:- 24 ,Correct Answer:- *C*

Explanation:- *It is clear from question that X is empty , Y has 20 liter water and Z has 30 liter of wine in it*

1st operation is like

X	*Y*	*Z*
Empty	*20 water*	*30 wine*

X, which is empty is filled with water from Y and Y is then filled with the wine from Z

X	*Y*	*Z*
10 water	*10 water* *10 wine*	*20 wine*

X is now emptied into Z

X	*Y*	*Z*
Empty	*10 water* *10 wine*	*20 wine* *10 water*

This will be the situtation of containers after first operation

In 2nd operation the steps are like:

X	*Y*	*Z*
5 water *5wine*	*5 water* *5wine*	*20 wine* *10 water*

X	*Y*	*Z*	
5 water	*(5 +10/3) water*	*(20 - 20/3) wine*	
5 wine	*(5 + 20/3) wine*	*(10 - 10/3) water*	*{ water and wine from Z are added to Y}*

X	*Y*	*Z*
Empty	*(5 +10/3) water* *(5 + 20/3) wine*	*(20 - 20/3 +5) wine* *(10 - 10/3+5) water*

In Z wine = 55/3 and water = 35/3
*strength of wine in the container Z = 55/90 * 100 = 61.10% (approximately 61%)*

Section : Section 5

QNo:- 25 ,Correct Answer:- *B*

Explanation:-
Here no. of operations are 2. $\therefore n = 2$

The capacity of the cask $= \frac{9}{1-\left(\frac{16}{25}\right)^{1/2}} = 9 \times 5 = 45$ litres

QNo:- 26 ,Correct Answer:- *B*

Explanation:-
$73(1 – (3.65/73))^{t} < 73 \times 85/100$
Solving this equation, we get t = 4.

QNo:- 27 ,Correct Answer:- *B*

Explanation:-
Let x be the size of the jug.
After the man drew off his first jugful of wine, the keg contained 10 – x gallons of wine.
When he filled up the keg with water, the proportion of wine was reduced to (10 – x)/10.
The man's second jugful contained x(10 – x)/10 gallons of wine, so the keg's wine content was reduced to 10 – x – x(10 – x)/10 gallons of wine.
Since the keg now contains equal quantities of wine and water, 10 – x – x(10 – x)/10 = 5.
Now just solve for x.
$10 – x – x(10 – x)/10 = 5$
$100 – 10x – (10x – x^2)=50$
$x^2 – 20x + 50 = 0$
$x = 10 \pm \sqrt{50}$
Of these two values , $10 + \sqrt{50}$ is greater than 10, so it can't be the capacity of the jug in this story. So $x = 10 – \sqrt{50}$, which is about 2.93 gallons.

QNo:- 28 ,Correct Answer:- *B*

Explanation:-
Suppose the volume of the milk in the vessel is 100 litres.
10 litres is drawn off and replaced with water. The ratio of milk to water in the mixture is now 9 : 1.
When 10 litres of this mixture is drawn off, 9 litres of milk and 1 litre of water are drawn off.
This is then replaced with milk. So, the quantity of milk is now 90 – 9 + 10 = 91 litres and the volume of water is 9 litres.
When 10 litres of this mixture is drawn off, 9.1 litres of milk and 0.9 litres of water are drawn off. This is then replaced with water.
So the final quantity of milk is 91 – 9.1 = 81.9 litres and the final quantity of water is 9 – 0.9 + 10 = 18.1 litres.
We know that the actual quantity of water is 199.1 litres.
So, the actual volume must be (100 × 199.1)/18.1 = 1100 litres.
Option B

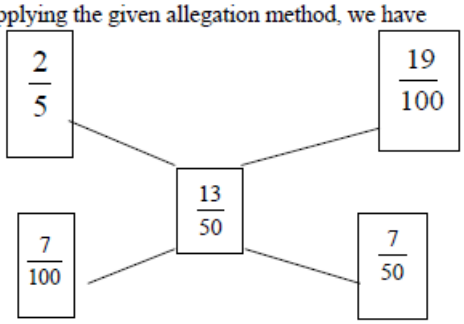
QNo:- 29 ,Correct Answer:- *A*

Explanation:-
The milkman has 100 litres of mixture. When he sells 25 litres of the mixture, he is removing ¼ of the milk and ¼ of the water in the original mixture. So, he is left with 15 litres of water and 60 litres of milk. He now adds 25 litres of water to the mixture. The new mixture will now contain (15 + 25) = 40 litres of warer and 60 litres of milk. Thus, the required ratio is 2 : 3.

QNo:- 30 ,Correct Answer:- *C*

Explanation:-

Now, applying the given allegation method, we have



$\therefore$ ratio of alcohol : whisky $= \frac{7}{100} : \frac{7}{50} = 1:2 \therefore$ qty. of whisky replaced $= \frac{2}{1+2} = \frac{2}{3}$

Hence the answer is option C