Directions of Test

Test Name	LPU CA 02 - 01 (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:- *A*

Explanation:-
Let father's age = f eldest son age = E, youngest age = y
Younger son age = 8
E + 4 = 2(8 + 4)
E = 20
F - 4 = 3 (20 - 4)
F = 52

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

Explanation:-
Let 7 years ago, ages of Sonu = 3x and Suresh = 4x . So 3x + 16 / 4x + 16 = 7/8 → x = 4. So ages 7 years ago will be 12 and 16 and present ages will be 19 and 23. So option 2.

QNo:- 3 ,Correct Answer:- *B*

Explanation:-
Let the present age of daughter is x and that father is 2x.
Mother's present age = 2 × (x – 2)
Now 2x + 2(x – 2) = 92 ⇒ 2x + 2x – 4 = 92 ⇒ 4x = 96 ⇒ x = 24
The present age of daughter is 24 years.

QNo:- 4 ,Correct Answer:- D

Explanation:- 6 years Ago age of B = B
A = 4B
C = 2B

at present
A = 4B + 6
C = 2B +6

ATQ
4B+6 = 1.5(2B+6)
B = 3 years

Present age of B = 3+6 = 9 years

QNo:- 5 ,Correct Answer:- A

Explanation:- Let the age ten years ago = 3x
Present age = 3x × 4/3 = 4x
Now, 4x – 3x = 10
x = 10
So, present age of Rajesh = 4x = 4 × 10 = 40 years

QNo:- 6 ,Correct Answer:- A

Explanation:- Let the present ages of Arun and Barun be 'x' and 'y' years respectively.
According to the question:
x + y = 7(x – y)
6x – 8y = 0_____(1)
5 years hence, age of Arun = x + 5
Age of Barun = y + 5
x + 5 + y + 5 = 9(x – y)
8x – 10y = 10_____(2)
On solving (1) & (2), we get
x = 20 years and y = 15 years
So, required answer = 20 × 2 = 40

Section : Section 2

QNo:- 7 ,Correct Answer:- A

Explanation:-
If we take equal quantities of A and B as 5 litres, then Milk to Water in A is 4 : 1, which means milk is 4 litres and water is 1 litre. Similarly milk to water in B is 3 : 2, which means milk is 3 litres and water is 2 litres. Hence milk to water in can C will be 4 + 3 : 1 + 2 = 7 : 3. So option A.

QNo:- 8 ,Correct Answer:- A

Explanation:- New ratio would be 5 x 1.4 : 7 x 1.5 : 8 x 1.75 = 7 : 10.5 : 14 which is equal to 2 : 3 : 4. Hence option A.

QNo:- 9 ,Correct Answer:- B

Explanation:- Ratio grandfather, father, and son at present is 5:3:1. Let their ages be 5x, 3x, x.
ATQ
3x - x = 20, 2x = 20. So x = 10

Hence their ages = 50,30,10

Also (50+x /(30+x) = 3:2. Solving this we get x = 10
Hence after 10 more years their age will be in ratio of 3:2:1

QNo:- 10 ,Correct Answer:- A

Explanation:- Let the total quantity used = 80 litres. So Volume of red color used = 50 litres and volume of green color used = 30 litres. In the upper half, that is 40 litres, ratio of red to green is 3 : 2. So volume of red in upper half = 24 litres and volume of green in upper half = 16 litres. So volume of red in lower half = 50 - 24 = 26 litres and volume of green in lower half = 30 - 16 = 14 litres. Hence required ratio = 26 : 14 = 13 : 7. Hence option A.

QNo:- 11 ,Correct Answer:- C

Explanation:-
The given ratio of Sparrows to Parrots to Doves is 3 : 7 : 5. Current difference between parrots and sparrows is 4. As the number of parrots is more than the number of sparrows by multiple of 63, so minimum difference should be 252 as the actual difference has to be a multiple of 4 also.

So if sparrows are 3x and parrots are 7x, then 7x - 3x = 252. Hence x = 63. So total birds would be 3x + 7x + 5x = 15x = 15 x 63 = 945. Hence option C.

QNo:- 12 ,Correct Answer:- A

Explanation:- $p : q = 2 : 3$ and $q : r = 9 : 8$
p:q:r = 6:9: 8

$\frac{p}{\sqrt{p^2+r^2}}$ = 6/$(36+64)^{1/2}$ = 6/10 = 3/5. Hence option A.

Section : Section 3

QNo:- 13 ,Correct Answer:- B

Explanation:- Profit Ratio of Anil : Ruhi : Teena would be (2000 x 8 + 2600 x 4) : (2800 x 8 + 3200 x 4) : (4200 x 4) = 33 : 44 : 21.
Hence profit share of Teena would be 21/98 x 34300 = Rs. 7350. Hence option B.

QNo:- 14 ,Correct Answer:- *D*

Explanation:- *Profit Ratio of N : H = 30000 x 12 : 30000 x 9 = 4 : 3. Let their profits be 4x and 3x. So 4x - 3x = 2000. So x = 2000. Hence total profit = 7x = 7 x 2000 = Rs. 14000. Hence option D.*

QNo:- 15 ,Correct Answer:- *C*

Explanation:-
Sankar, Srinivas, Manohar invested their money for a period of 12, 5 and 7 months respectively. The ratio of their profits will be 40000 × 12 : 30000 × 5 : 70000 × 7 = 48:15:49
Clearly Manohar gets the largest share of profit at the end of the year. Hence option C.

QNo:- 16 ,Correct Answer:- *A*

Explanation:- *Let's try answer options*
1. 2,70,000 : 1,80,000 : 3,60,000 = 3:2:4
New ratio after 3 years, 2,70,000 × 3 : 1,80,000 × 3 + 2,70,000 × 2 : 3,60,000 × 3 + 2,70,000 × 1
= 81:108:135 = 9:12:15 = 3:4:5, ***satisfies***
2. 1,70,000:1,80,000:3,60,000 = 17:18:36 ≠ 3:2:4, doesn't satisfies
3. 2,70,000:80,000:3,60,000 = 27:8:36 ≠ 3:2:4, doesn't satisfies
4. 2,70,000:1,80,000:3,00,000 = 9:6:10 ≠ 3:2:4, doesn't satisfies

QNo:- 17 ,Correct Answer:- *C*

Explanation:-
Ratio of investments A : B = 3:2, A : C = 2:1, thus A : B : C = 6 : 4 : 3, Thus they will share profits in the ratio of their investments, so B's share will be = 4/13× 157300 = 48,400

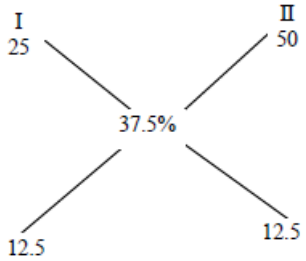
QNo:- 18 ,Correct Answer:- *B*

Explanation:-
Profit Ratio of N : M = 2 : 3. Total profit = Rs. 7000. N gets 15% additional profit. So he got 0.15 x 7000 = 1050 for being the working partner.
Remaining Profit = 7000 - 1050 = 5950. So N would get 2/5 x 5950 = 2380 from his investment. So his total profit = 1050 + 2380 = Rs. 3430. So option B.

Section : Section 4

QNo:- 19 ,Correct Answer:- *A*

Explanation:- *We have*



∴ 6 litres each of both juices should be mixed

QNo:- 20 ,Correct Answer:- *A*

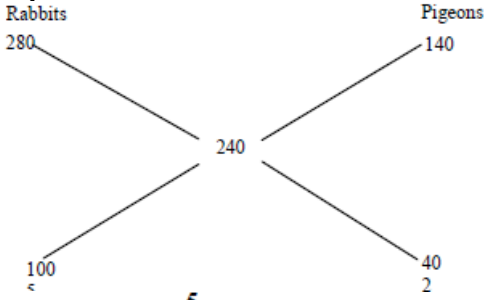
Explanation:- *Let the quantities of the paints A and B in the mixture sold be a litres and b litres respectively.*
Value at which the entire mixture is sold=264
Profit percent made=10%
Value at which the entire mixture is bought =264(100/110) = 240*
Price at which the entire mixture is bought=24 per litre
Let the cost of B be x per litre.
Cost of A=(x+8)per litre
$\frac{(x+8)a+xb}{10} = 24$
Maximum cost of B will occur when a is minimum.
b<=a.
So, minimum a is 5. Corresponding b is 5.
Then (x+8)(5)+x(5)=240
x=20

QNo:- 21 ,Correct Answer:- *C*

Explanation:-
Let the price per kg of the third variety be x. As the ratio is given to be 1 : 1 : 2, so (230 x 1 + 245 x 1 + 2x)/4 = 250. So 475 + 2x = 1000. Hence x = 262.5. So option C.

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

Explanation:- *If all are rabbits, then number of legs = 70 × 4 = 280. If all are pigeons ∴ their legs = 70 × 2 = 140*



Therefore rabbits = $\frac{5}{7} \times 70 = 50$

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

Explanation:- *Ratio of both quantities = [10-(-12)] : [-12-(-15)] = 22:3. Quantity sold at 10% profit = 3/25 x 200 = 24 kg*

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

Explanation:-
Let the volume of each container be 315 units.
The total volume of the three containers is 945 units.
Hence, the volume of water in three containers is 126, 135 and 140 units respectively and that of alcohol is 189, 180 and 175 units respectively.
The ratio of water and alcohol in the bigger container = 401 : 544
Let the volume of the mixture that needs to be replaced by water be x units

$$\text{Hence, } 401 - 401 \times \frac{x}{945} + x = 544 - 544 \times \frac{x}{945} \Rightarrow x = \frac{143 \times 945}{1088}$$

$$\text{So the fraction of the mixture that needs to be replaced} = \frac{143}{1088}$$

Section : Section 5

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

Explanation:- $\text{Amount of alcohol left} = \left(1 - \frac{1}{4}\right)^4 = \frac{81}{256}$

Required ratio = (256 – 81) : 81 = 175: 81

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

Explanation:- *Let the capacity of the container be x.*

Quantity of the alcohol in the container after 2 replacements = $x\left(1-\frac{9}{x}\right)\left(1-\frac{9}{x}\right) = x - 17.1$

$\Rightarrow x^2 - 18x + 81 = x^2 - 17.1x$ *or x = 90 litres*

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

Explanation:-

Name of Liquid	In the beginning (in litres)	1st Iteration (in litres)	2nd Iteration(in litres)	Required Ratio
Alcohol	48	42	42-(42/64*8)=147/4	147
Water	16	14	14-(14/64*8)=49/4	49
Soda	0	8	8 – (8/64*8) + 8=15	60

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

Explanation:- *The total mixture that he drinks in 16 days is 100 + 200 + ... + 1600; when on the last day he drinks the entire 1600 ml of the mixture and empties the bottle. Total mixture drunk*
= (16/2) (100 + 1600) = 13600 ml
But out of this total mixture 1600 ml was the original drink.
So the quantity of water consumed by Abhay is 12000 ml.

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

Explanation:- *Initial Quantities in the tank* *A = 36 lt* *B = 54 lt*
Quantities in the tank, when 10 lt of the liquid is taken out *A = 32 lt* *B = 48 lt*
Quantities in the tank, when 10 lt of liquid A is added *A = 42 lt* *B = 48 lt*
Quantities in the tank, when 15 lt of the liquid is taken out *A = 35 lt* *B = 40 lt*
Quantities in the tank, when 15 lt of liquid B is added *A = 35 lt* *B = 55 lt*
Ratio of B to A = 55/35 = 11/7

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

Explanation:- *Using repeated dilution, Quantity of pure milk left after giving to 4th customer = 40 (1-10/40)* ^{4}
Using repeated dilution, Quantity of pure milk left after giving to 5th customer = 40 (1-10/40) ^{5}
So the amount of pure milk that the 5^{th} *customer receives = 40 (1 - 10/40)* ^{4} *- 40 (1 - 10/40)* ^{5}
$= 40 * 1/4 (3/4)^4 = 405 / 128$ *litres.*