Directions of Test

Test Name	LPU CA 02 - 06 (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:- *B*

Explanation:-

Checking the options we find 2nd option is correct. Because 10 years ago Rakesh's age was 27 years and his wife was 18 years old and $27 = \frac{3}{2}$ times of 18. Hence verified.

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

Explanation:- *Let the age of boy be x*
$2 \times x^2 - 25x = 14 \times 3$
On solving we get
$(2x+3)(x-14)=0$
So x=14

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

Explanation:- *Let mother's age = m*
Daughter's age = 45 – m
A.T.Q.
$(m - 5)(45 - m - 5) = 4(m - 5)$
$m = 36$

QNo:- 4 ,Correct Answer:- *C*

Explanation:-
Let the age of A be 'a' years at one stage.
Then the age of B will be (a - 4) years at this stage.
After 16 years, $a + 16 = 3a \Rightarrow 2a \Rightarrow 16 \Rightarrow a = 8$
∴ At initial stage, age of A = 8 years; B =4 years
Two years before this stage, ages of A and B were 6 years and 2 years respectively.

QNo:- 5 ,Correct Answer:- D

Explanation:-
Let age of prakash =x
So age of Shyam =3x
And age of Ram=3x/2
According to question
x+3x+3x/2=55
⇒ x=10

Hence age of Ram=$\frac{3x}{2}=\frac{3\times10}{2}=15$

QNo:- 6 ,Correct Answer:- A

Explanation:- Let elder person be 'A' & younger person be 'B'
A – B = 20
A – 6 = 3(B – 6)
Solving, age of elder person = 36 years

Section : Section 2

QNo:- 7 ,Correct Answer:- B

Explanation:-
The required ratio = 8 × 7 : 5 × 9 = 56 : 45
So, there is a decrease in wage bill in the ratio 56 : 45.

QNo:- 8 ,Correct Answer:- C

Explanation:-
Let the number of school going children and non-school going children be 5x and 4x respectively.
New number of non-school going children
= 4x × 1.2

Hence, new ratio = $\frac{5x}{4x\times1.2}=\frac{25}{24}$ or 25: 24

QNo:- 9 ,Correct Answer:- D

Explanation:-
Let the quantity of acid in original mixture be x litre and that of water be 3x litre.

$\therefore \frac{x+5}{3x}=\frac{1}{2}$

⇒ 2x + 10 = 3x
⇒ x = 10
∴ Quantity of new mixture
= 4x + 5 = 45 litres

QNo:- 10 ,Correct Answer:- *D*

Explanation:- *The ratio of the first and second class fares between two railway stations is 4 : 1*
First class fare= Rs. 4X and second class fare=Rs. X and
Number of passengers travelling by first and second classes is 1: 40.
Number of passengers in First class= Y,
Number of passengers in Second class= 40Y
Ratio of Total fare in 1st class and Second class is= 4 XY / 40XY= 1/10
Total Fares collected= Rs. 1100
The amount collected from the first class passengers is = 1/11 × 1100= Rs. 100

QNo:- 11 ,Correct Answer:- *A*

Explanation:- Let the initial money with A and B is 3x and 5x respectively. Now we have $\frac{3x-40}{5x-90}=\frac{7}{11}$
⇒ 33x – 440 = 35x – 630
⇒ 2x = 190 ⇒ x = Rs 95
Hence the money with A = 3x = 3 × 95 = Rs 285
The money with B = 5x = 5 × 95 = Rs 475.

QNo:- 12 ,Correct Answer:- *C*

Explanation:- *A= 5/7 B*
C = 10/7 B
A:B:C = 5:7:10
Hence C:A = 2:1

Section : Section 3

QNo:- 13 ,Correct Answer:- *A*

Explanation:-
The ratio of investment of A to B =
5000 × 12 : 6000 × 7 = 10 : 7.
$\text{Share of A} = \frac{10}{17}\times 34000 = 20000$
And share of B = 14000.

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

Explanation:-
When their capitals were interchagned, then A would have received 175% more than what he actually received it means in actual B received 175% more than A. Ratio of their investment of A to B = 1: 2.75 = 4: 11
$\therefore \text{Capital of B} = \frac{11}{4+11}\times 30000 = 22000$

QNo:- 15 ,Correct Answer:- D

Explanation:- Ratio of Profits received by A, B and C is 10000:12000:16000 = 5:6:8
Let ratio of their investments be 5x ,6x and 8x
So 5x+6x+8x = 19x = 200000
So x= 200000/19
Required value is (5x+6x) - 8x = 3x
So 3*200000/19 = 31579

QNo:- 16 ,Correct Answer:- D

Explanation:-
Profits are divided in the ratio I_1T_1/I_2T_2
Where I and T are investment and time respectively,Therefore
If B invested for y months, then $\frac{5\times 8}{6\times y}=\frac{5}{9}\Rightarrow y=12$months.

QNo:- 17 ,Correct Answer:- B

Explanation:- Profit share ratio of A, B and C
A = (30k × 12) = 360000
B = (25k × 3 + 30k × 9) = 345000
C = (20k × 12) = 240000
Required ratio = 360 : 345 : 240 = 24 : 23 : 16. So option B.

QNo:- 18 ,Correct Answer:- D

Explanation:- Investment of A = Rs 12,000.
Investment of B = Rs 15,000.
Total profit = Rs 24,000.
Extra profit to A = 1,400 × 8 = Rs 11,200 and
Extra profit to B = 1,400 × 4 = Rs 5,600.
∴ Remaining profit = 24,000 – (11,200 + 5,600) = Rs 7200.
This is to be distributed in the ratio of their capitals i.e. in the ratio 4: 5.
∴ Share of A = 4/9 × 7,200 = Rs 3,200 and
Share of B = 5/9 × 7,200 = Rs 4,000.
Hence total share of A = 11,200 + 3,200 = Rs 14,400 and total share of B = 5,600 + 4,000 = Rs 9,600.
Difference between their profit shares = 14,400 – 9,600 = Rs 4,800.

Section : Section 4

QNo:- 19 ,Correct Answer:- C

Explanation:- Quantity sold = 30 l , Milk = 30 x 2/3 = 20 l , Water = 30-20 = 10 l
New quantity of milk = 80-20 =60
New quantity of water = 40-10+30 = 60
Ratio = 1:1

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

Explanation:- *Quantity of milk = 2/3*60 = 40 litres*
Quantity of water = 60 - 40 = 20 litres
Since, new ratio = 1:2
Also, let the quantity of water added is 'x' litres
40/(20 + x) = 1/2
On solving, we get x = 60 litres

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

Explanation:- *Assuming he takes 3kg and 2kg .*
So total cp = (20x3) + (50x2) = 160
Total SP = 50x5 = 250
Profit % = 90x100/160 = 56.25

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

Explanation:-
Since two liquids of concenteration 25% and 30% are mixed.
So, the mixture should be of concenteration between 25% and 30 %. There is only one option satisfying this. So Answer is (b).

Alternate explanation:

$$\%\text{required} = \frac{\text{Quantity of milk in the new mixture}}{\text{Quantity of new mixture}} \times 100$$

$$= \frac{6 \text{ parts of } 25\% \text{ milk} + 4 \text{ parts of } 30\% \text{ milk}}{(6+4) \text{ parts of the liquid}} \times 100$$

$$= \frac{6 \times \frac{25}{100} + 4 \times \frac{30}{100}}{6+4} \times 100$$

$$= \frac{\frac{6}{4} + \frac{12}{10}}{10} \times 100$$

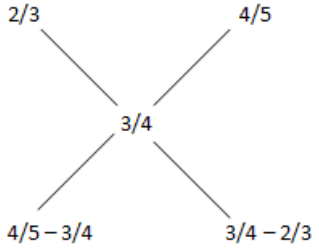
$$= \frac{30+24}{20 \times 10} \times 100$$

$$= \frac{54}{2}^{27}$$

$$= 27\%$$

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

Explanation:-
Applying Alligation Rule, we get



(this is on applying alligation rule on zinc)
Required ratio = (4/5 – 3/4) : (3/4 - 2/3) = 3 : 5

QNo:- 24 ,Correct Answer:- C

Explanation:-
Milk = 48×13/20 = 31.2 and 42×18/35 = 21.6
Total Milk = 31.2 + 21.6 = 52.8
Total water = 110 – 52.8 = 57.2
Milk : Water = 52.8/57.2 = 12:13

Section : Section 5

QNo:- 25 ,Correct Answer:- C

Explanation:-
The bottle originally contains dettol only. Let the bottle contain 1 litre of dettol originally. So, applying the above formula,

$$\frac{\text{Amount of A (dettol) left}}{\text{Amount of (water) left}}=\frac{\left(1-\frac{x_r}{x_2}\right)^n}{1-\left(1-\frac{x_r}{x_0}\right)^n}\rightarrow\frac{\text{Dettol}}{\text{Water}}=\frac{\left[1-\frac{1}{\frac{3}{1}}\right]^4}{1-\left[1-\frac{1}{\frac{3}{1}}\right]^4}=\frac{\left(\frac{2}{3}\right)^4}{1-\left(\frac{2}{4}\right)^4}=\frac{16}{65}$$

∴ Finally, the bottle contains dettol and water in the ratio 16:65

QNo:- 26 ,Correct Answer:- C

Explanation:- *The resulting water in the mixture after 2 steps will be-*
$\left\{1-\frac{5}{50}\right\}^2=\frac{81}{100}$.

Amount of wine = 100 - 81 = 19
So, required ratio is 19:81

QNo:- 27 ,Correct Answer:- D

Explanation:- $\frac{36}{49}F=F\left(1-\frac{4}{F}\right)^2$ where F is the full capacity.

So $\frac{6}{7}=1-\frac{4}{F}$

⇒ *F = 28 gallons*

QNo:- 28 ,Correct Answer:- C

Explanation:- *Let initial qty = x. As per question, $x(3/4)^4 = 10 \rightarrow x = 2560/81$.*

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

Explanation:- *Alcohol = 900. Now as 20% is taken out. So 80% will be left.*
Final Alcohol = 900 x .8 x .8 = 576
Water = 1125 – 576 = 549
% of water = 549 x 100/1125 = 48.8 %

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

Explanation:- *First 20% is taken out, then 40% and then 80%. As replacement is done with water, we will solve by taking Milk.*
Milk = 4/5 x 3/5 x 1/5 = 12/125
Water = 113/125
Milk : Water = 12 : 113