

Quiz Date: 14th April 2020

Q1. A mixture of a certain quantity of milk with 16 litres of water is worth Rs 3 per litre. If pure milk be worth Rs 7 per litre and water is free of cost, then find how much milk is there in the mixture?

- (a) 28 litres
- (b) 12 litres
- (c) 14 litres
- (d) 16 litres
- (e) 18 litres

Q2. A jar has 60 litres of milk. From the jar, 12 litres of milk was taken out and replaced by an equal amount of water. If 12 litres of the newly formed mixture is taken out of the jar, what is the final quantity of milk left in the jar ?

- (a) 38.4 litres
- (b) 40 litres
- (c) 36 litres
- (d) 28.6 litres
- (e) 36.5 litres

Q3. A is an Active partner and B is an inactive partner in business. A put in Rs. 5,000 and B puts in Rs. 6,000. A received 15% of the profit for managing the business and the rest is divided in ratio of their invested capitals. The amount received by A out of the total profit of Rs. 880 ?

- (a) Rs. 132
- (b) Rs. 340
- (c) Rs. 472
- (d) Rs. 492
- (e) Rs. 452

Q4. A, B and C become partners in a business. A contributes $\frac{1^{rd}}{3}$ of the capital for $\frac{1^{th}}{4}$ of the time. B contributes $\frac{1}{5}$ th of the capital for $\frac{1}{6}$ th of the time and C the rest of the capital for the whole time. If the profit is Rs. 1,820, then find the share of A out of total profit?

- (a) Rs. 130
- (b) Rs. 260
- (c) Rs. 292
- (d) Rs. 304
- (e) Rs. 312

Q5. A, B and C share profit in the ratio of $\frac{1}{4} : \frac{1}{6} : \frac{7}{12}$. If C retires, A and B share the profit of C in the ratio of 4 : 5 respectively. The new profit sharing ratio of A and B will be ?

- (a) 55 : 53
- (b) 53 : 55

- (c) 5 : 3
- (d) 3 : 5
- (e) 3 : 7

Q6. A and B enter into partnership investing Rs. 48,000 and Rs. 60,000 respectively. After 3 months, A withdraws Rs. 8,000 while B invests Rs. 6,000 after 6 months of starting of business. Out of the total amount of profit, if A gets Rs. 12,000 as his share at the end of the year, then find total profit share of A and B together?

- (a) Rs. 24,000
- (b) Rs. 30,000
- (c) Rs. 36,000
- (d) Rs. 37,000
- (e) Rs. 38,000

Q7. M, P and Q together started a business. M invested Rs. 6,500 for 6 months, P invested Rs. 8,400 for 5 months, and Q invested Rs. 10,000 for 3 months. M is working member for which he gets 5% of total profit extra and rest profit divided in ratio of their invested capitals. If the total profit is Rs. 7400, then find Q's share?

- (a) Rs. 1900
- (b) Rs. 2,100
- (c) Rs. 3,200
- (d) Data are incomplete
- (e) Rs. 3,600

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Q8. One type of mixture contains 25% of milk another type of mixture contains 30% of milk. A container is filled with 6 parts of the first mixture and 4 parts of the second mixture. The percentage of milk in the mixture is .

- (a) 27%
- (b) 31%
- (c) 29%
- (d) 33%
- (e) 30%

Q9. Two gallons of a mixture of spirit and water contains 12% of water. They are added to 3 gallons of another mixture, containing 7% of water, again half of a gallon of water is added to the whole mixture. Find percentage of water in the resulting mixture .

- (a) $17\frac{3}{11}\%$
- (b) $16\frac{12}{11}\%$
- (c) $14\frac{1}{11}\%$
- (d) Cannot be determined
- (e) None of these

Q10. The ratio of milk to water in three containers of equal capacity is 3 : 2, 7 : 3 and 11 : 4 respectively the three containers are mixed together. What is the ratio of water to milk in final mixture.

- (a) 38 : 17
- (b) 21 : 11
- (c) 61 : 29
- (d) 29 : 61
- (e) 11 : 21

Q11. A bottle is full of Dettol. One-third of it is taken out and then an equal amount of water is poured into the bottle to fill it. The operation is done four times. Find the final ratio of Dettol and water in the bottle.

- (a) 13 : 55
- (b) 20 : 74
- (c) 16 : 65
- (d) 10 : 48
- (e) 65 : 16

Q12. A chemist has 10 litre of a solution that is 10% nitric acid by volume. He wants to dilute the solution to 4% strength by adding water how many litre of water must be added ?

- (a) 15
- (b) 20
- (c) 18
- (d) 25
- (e) 17

Q13. An alloy contains copper and zinc in the ratio 5 : 3 and another alloy contains copper and tin in the ratio 8 : 5. If equal weights of both the alloys are mixed together, then the weight of tin in the resulting alloy per kg will be

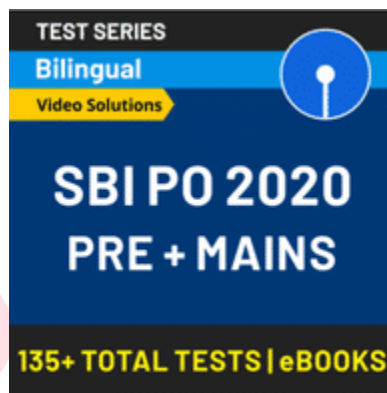
- (a) $\frac{26}{5}$
- (b) $\frac{5}{26}$
- (c) $\frac{7}{31}$
- (d) $\frac{31}{7}$
- (e) None of these

Q14. Alok bought 25 kg of rice at the rate of Rs. 6 per kg and 35 kg of rice at the rate of Rs. 7 per kg. He mixed both type of rice and sold the mixture at the rate of Rs. 6.75 per kg. What was his gain or loss in the transaction ?

- (a) Rs. 16 gain
- (b) Rs. 16 Loss
- (c) Rs. 20 gain
- (d) Rs. 10 gain
- (e) Rs. 10 loss

Q15. A and B entered into a partnership, investing Rs. 16000 and Rs. 12000 respectively. After 3 months, 'A' withdraw Rs. 5000, while B invested Rs. 5000 more. After 3 months more, C joins the business with a capital of Rs. 21,000. After an year, they obtained a profit of Rs. 26400. What is B's share in the profit?

- (a) Rs.10050
- (b) Rs.11600
- (c) Rs.10500
- (d) Rs.10800
- (e) Rs.18000



Solutions

S1. Ans.(b)

Sol.

Let the total quantity of mixture be $x \ell$.

$$\therefore 3x = 7(x - 16) \text{ or } x = 28\ell$$

$$\therefore \text{quantity of milk} = 12\ell$$

S2. Ans.(a)

Sol.

Ratio of milk and water after 1st operation = $48 : 12 = 4 : 1$

$$\text{Final quantity of milk} = (60 - 12) \times \frac{4}{5}$$

$$= 38.4 \ell$$

S3. Ans.(c)

Sol. Total profit = Rs. 880

Since A gets 15% of total profit for management

$$\therefore \text{Remaining of profit} = 880 - \frac{880 \times 15}{100}$$

$$= \text{Rs. } 748$$

	A	B
Amounts	5,000	6,000
Ratio of Capital	5	: 6

The remaining profit is being divided in the ratio of their capital. A's share of profit = $\frac{748}{5+6} \times 5 = \text{Rs. } 340$

$$\text{Total profit Received by A} = 340 + 132 = \text{Rs. } 472$$

S4. Ans.(b)

Sol. Let total capital of A, B and C = 15 units

Let total time for investment = 12 units

Now, According to question.

	A	B	C
Capitals	$\frac{1}{3} \times 15$ units	$\frac{1}{5} \times 15$ units	15 - 8 = 7
Time	5	3	7
Ratio of	$\left(\frac{1}{4} \times 12\right)$ units	$\left(\frac{1}{6} \times 12\right)$ units	$\left(\frac{7}{12}\right)$ units
Time	3	2	12
	15	6	84
	5	: 2	: 28

Ratio of profits

$$\text{Total profit} = 5 + 2 + 28 = 35 \text{ units}$$

$$\text{Also, total profit} = \text{Rs. } 1820 \text{ (Given) } 35 \text{ units} = \text{Rs. } 1820$$

$$1 \text{ unit} = \frac{1820}{35} = \text{Rs. } 52$$

$$\text{Hence A's share in profit} = 5 \text{ units} = 52 \times 5 = \text{Rs. } 260$$

S5. Ans.(a)

Sol.	A	:	B	:	C
Profit →	$\frac{1}{4}$:	$\frac{1}{6}$:	$\frac{7}{12}$
	$3_{\times 9}$:	$2_{\times 9}$:	$7_{\times 9}$

Note : To avoid fraction in calculation multiply all the ratios by 9

After that new ratio of profits.

	A	:	B	:	C
Profit →	27	:	18	:	63

$$\text{New profit of A} = 27 + \frac{63}{5+4} \times 4 = 55$$

$$\text{New profit of B} = 18 + \frac{63}{4+5} \times 5 = 53$$

$$\therefore \text{New profit sharing ratio of A and B} = 55 : 53$$

S6. Ans.(b)

Sol. Total capital of A invested in 1 year

$$= 48,000 \times 3 + 40,000 \times 9$$

$$= 1,44,000 + 3,60,000$$

$$= \text{Rs. } 5,04,000$$

Total capital of B invested in 1 year

$$= 60,000 \times 6 + 6,60,00 \times 6$$

$$= \text{Rs. } 756000$$

	A	:	B
Capital	→ 504000	:	756000
Profit	→ 2	:	3
	↓	:	↓
	× 6000	:	× 6000
	↓	:	↓
	12,000	:	18,000

$$\text{Total profit} = (2 + 3) \times 6000$$

$$= \text{Rs. } 30,000$$

S7. Ans.(a)

Sol.

	M	P	Q
Capital	→ (6500	→ (8400	→ (10,000
	×	×	×
Time	→) 6	→) 5	→) 3
	390	420	300
Profit	→ 13	14	10

$$\text{M's extra share on working partner} = 7400 \times \frac{5}{100} = \text{Rs. } 370$$

$$\text{Remaining Profit} = \text{Rs. } 7400 - \text{Rs. } 370 = \text{Rs. } 7030$$

According to the question,

$$(13 + 14 + 10) \text{ units} = \text{Rs. } 7030$$

$$37 \text{ units} = \text{Rs. } 7030$$

$$1 \text{ units} = \text{Rs. } \frac{7030}{37}$$

$$\text{Profit of Q} = 10 \text{ units}$$

$$= \text{Rs. } \frac{7030}{37} \times 10 = \text{Rs. } 1900$$

S8. Ans.(a)

Sol.

Required percentage of milk

$$= \frac{\frac{25}{100} \times 6 + \frac{30}{100} \times 4}{10} \times 100$$

$$= 27\%$$

S9. Ans.(a)

Sol.

Required percentage of water

$$\begin{aligned}
 &= \frac{\frac{12}{100} \times 2 + \frac{7}{100} \times 3 + 0.5}{5.5} \times 100 \\
 &= \frac{95}{5.5} \\
 &= \frac{190}{11} \\
 &= 17\frac{3}{11}\%
 \end{aligned}$$

S10. Ans.(d)

Sol.

Let capacity of each container = V

∴ Total quantity of milk after mixing

$$\begin{aligned}
 &= \left(\frac{3}{5} + \frac{7}{10} + \frac{11}{15}\right)V \\
 &= \frac{61}{30}V
 \end{aligned}$$

And that of water = $\left(\frac{2}{5} + \frac{3}{10} + \frac{4}{15}\right)V$

$$= \frac{29}{30}V$$

∴ Required ratio = $\frac{29}{61}$



S11. Ans.(c)

Sol.

Let initially Dettol was 3x

∴ Final quantity of Dettol

$$\begin{aligned}
 &= 3x \left(1 - \frac{x}{3x}\right)^4 \\
 &= 3x \times \frac{16}{81} \\
 &= \frac{16x}{27}
 \end{aligned}$$

∴ Required ratio = $\frac{\frac{16x}{27}}{3x - \frac{16x}{27}}$

$$= \frac{16}{65}$$

S12. Ans.(a)

Sol.

$$\begin{aligned} \text{Initial quantity of acid} &= 10 \times \frac{10}{100} \\ &= 1 \ell \end{aligned}$$

And that of water = 9 ℓ

Let x litre water is added.

$$\therefore \frac{4}{100} \times (10 + x) = 1$$

$$\Rightarrow x = 15 \ell$$

S13. Ans.(b)

Sol.

Let quantity of alloy of copper and zinc = 8 kg

And that of copper and tin = 13 kg

Let 1 kg of each was mixed

∴ weight of tin in this mixture of 2 kg

$$= 1 \times \frac{5}{13}$$

$$= \frac{5}{13} \text{ kg}$$

$$\therefore \text{Weight of tin per kg} = \frac{5}{26} \text{ kg}$$

S14. Ans.(d)

Sol.

Loss or gain in the transaction

$$= 6.75 \times 60 - (25 \times 6 + 35 \times 7)$$

$$= \text{Rs. 10 gain}$$

S15. Ans.(d)

Sol.

A's share : B's share : C's share

$$= (16 \times 3 + 11 \times 9) : (12 \times 3 + 17 \times 9) : (21 \times 6)$$

$$= 147 : 189 : 126 = 7 : 9 : 6$$

Therefore, B's share

$$= \left(\frac{26400}{7+9+6} \times 9 \right) = \text{Rs. 10800}$$

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