

TCS NQT 2024 DISCUSSION:

Q.

every unit cost 1

100 units are purchased. If one fifth of them are sold for 20% profit, $\frac{2}{5}$ of them for 10% profit and remaining for 60% loss. find the SP of all units

day 1

Ans: 100 units = 100rs , 1 unit = 1rs

$$100 \times \frac{2}{5}$$

$$20 \xrightarrow{20\%} 24 \checkmark$$

$$40 \xrightarrow{40\%} 56 \checkmark$$

$$40 \xrightarrow{60\%} 16$$

Simple.

CP

$$\textcircled{100}$$

SP

$$\textcircled{96}$$

TCS NQT 2024 DISCUSSION:

One-third of goods are sold at a 15% profit, 25% of the goods are sold at a 20% profit and the rest at a 20% loss. If the total profit of Rs. 138.50 is earned on the whole transaction, then the value (in Rs.) of the goods is:

Rs. 8,310

Rs. 8,587

Rs. 7,756

Rs. 8,030

$\cdot x$

$$\left[\frac{x}{3} \times \frac{115}{100} = \frac{115x}{300} \right] \checkmark$$
$$\left[\frac{x}{4} \times \frac{120}{100} = \frac{30x}{100} \right]$$

$1 - \left(\frac{x}{3} + \frac{x}{4} \right)$

2min

TCS NQT 2024 DISCUSSION:

Q9:

$$B = \frac{125A}{100}$$

Tricky

Simple:

$$B = \frac{5}{4} A$$

(1)

$$\begin{array}{l} A \quad \frac{\text{eff}}{4} \times \frac{\text{days}}{75} \quad \} = 300 \\ B \quad 5 \checkmark \end{array}$$

$$C \quad 6.25$$

$$(A+B) \times 10 = (4+5) \times 10 = 90$$

$$300 - 90 = 210$$

$$\frac{210}{6.25} = 33 \text{ days}$$

A = 75 days B = 25% more efficient than A

B is 25% more efficient than A.

$$\frac{5 \times 25}{100} = 1.25$$

work = day x eff

$$A = 100$$

$$B = 125$$

$$C = \frac{5 \times 25}{100} = \frac{125}{100}$$

1.25

$$\frac{B}{A} = \frac{125}{100} = \frac{5}{4}$$

C 25% ↑ than B

$$C : 6.25 \quad B = 5$$

$$C = B + 1.25$$

$$5 + 1.25$$

TCS NQT 2024 DISCUSSION:

$$SI = \frac{P \times R \times T}{100}$$

4) A certain sum of Rs. 5,000 is invested for 2 years at 10% p.a. find the S.I. on it. The amount obtained is now compounded annually at same rate. find the total amount after 2 years

$$P = 5,000, t = 2 \text{ years}, 10\% = r$$

$$SI = \frac{5,000 \times 2 \times 10}{100} = 1,000 \checkmark$$

$$\text{Amount} = 5,000 + 1,000$$

$$= \underline{6,000} \checkmark$$

$$P = 6,000, r = 10\%, 2 \text{ years}$$

$$A = P \left(1 + \frac{r}{100}\right)^n$$

$$6,000 \left(1 + \frac{10}{100}\right)^2$$

$$= 6,000 \times \frac{11}{10} \times \frac{11}{10} = \frac{121}{6} \times 6,000 = \underline{7,260} \checkmark$$

TCS NQT 2024 DISCUSSION:

- 3) Rs 500 is the price of 100 units. 80 of them are sold at Rs 10/unit, 20 units are sold at 50% discount. Find the overall profit & loss %.
- 4) A certain sum of

$$\text{CP} * 100 \text{ units} \rightarrow 500 \text{ Rs} \checkmark$$

$$1 \text{ unit} \rightarrow \frac{500}{100} = 5 \text{ Rs} \checkmark$$

$$\frac{5 \text{ Rs}}{50\% \Rightarrow 2.5}$$

SP

$$80 \times 10 = 800 \text{ Rs}$$

$$20 \times 2.5 = 50 \text{ Rs}$$

$$850$$

$$\text{Profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100 = \frac{350}{500} \times 100 = 70\%$$

TCS NQT 2024 DISCUSSION:

Q.

17th July

Find the correct symbol to be placed

$$\left(1 - \frac{1 - \frac{2}{3}}{1 - \frac{1}{1 - \frac{3}{5}}} \right) \div \frac{\frac{2}{3}}{\frac{3}{2}} \left(\frac{3}{4} \right) = 1$$

✓

$$\left(1 - \frac{1 - \frac{1}{\frac{1}{3}}}{1 - \frac{1}{1 - \frac{2}{5}}} \right) \times \frac{4}{9} = \left(\frac{1 - 3}{1 - \frac{1}{3/5}} \right) \times \frac{4}{9}$$

Q. $1 - \frac{2}{3} = \left(\frac{1}{3} \right)$

$1 - \frac{3}{5} = \frac{2}{5}$

$\frac{2}{3} \times \frac{2}{3} = \frac{4}{9}$

$\frac{1}{(1/3)}$

$\frac{4}{3} \times \frac{3}{4} = 1$

$\left(\frac{-2}{1 - \frac{5}{3}} \right) \times \frac{4}{9}$

$\left(\frac{-2 \times 3}{-2} \right) \times \frac{4}{9}$

TCS NQT 2024 DISCUSSION:

7) A person starts from home at m/s (speed)
After 2 hours another person starts from the same
place. They meet after 6 hrs. Find the
total distance travelled by the first person
in 10 hrs.

TCS NQT 2024 DISCUSSION:

A car starts from point A towards point B, travelling at the speed of 20 km/h. $1\frac{1}{2}$ hours later, another car starts from point A and travelling at the speed of 30 km/h and reaches $2\frac{1}{2}$ hours before the first car. Find the distance between A and B.

1. 300 km

2. 240 km

3. 260 km

4. 280 km

Diagram and Handwritten Notes:

Handwritten Equations:

$$t_1 - t_2 = \frac{5}{2} \text{ hr}$$

$$\frac{(x-30)}{20} - \frac{x}{30} = \frac{5}{2}$$

$$\frac{3x - 90 - 2x}{60} = \frac{5}{2}$$

$$\frac{x - 90}{60} = \frac{5}{2}$$

$$x - 90 = 150$$

$$x = 240 \text{ km} \checkmark$$

Alternative Calculation:

$$\frac{s_1 \times s_2}{s_1 - s_2} \times \Delta T$$

$$\frac{20 \times 30}{20 - 30} \times (1.5 + 2.5)$$

$$\frac{20 \times 30}{10} \times 4 = 240$$

Summary of Handwritten Notes:

- Car 1: $C_1 = 20 \text{ km/h}$, starts at 10 AM, reaches B at 5:30 PM.
- Car 2: $C_2 = 30 \text{ km/h}$, starts at 11:30 AM, reaches B at 3 PM.
- Distance between A and B: x km.
- Time difference between arrivals: 2.5 hours.
- Time difference between starts: 1.5 hours.
- Total time difference: $\frac{5}{2}$ hours.

C_1 20 km/h
 $1 \text{ hr} = 20 \text{ km}$
 $30 \text{ min} = 10 \text{ km}$

TCS NQT 2024 DISCUSSION:

Tea worth Rs 126 per kg and Rs 135 per kg are mixed with a third variety in the ratio 1:1: 2. If the mixture is worth Rs 153 per kg, the price of the third variety per kg will be :
(A) Rs. 169.50 (B) Rs. 175.50 (B) Rs. 170 (D) Rs. 180

Handwritten solution:

Let the price of the third variety be x per kg.

Tea varieties and their prices per kg:

- T_1 : 126/kg
- T_2 : 135/kg
- T_3 : x /kg

Mixture ratio: 1:1:2

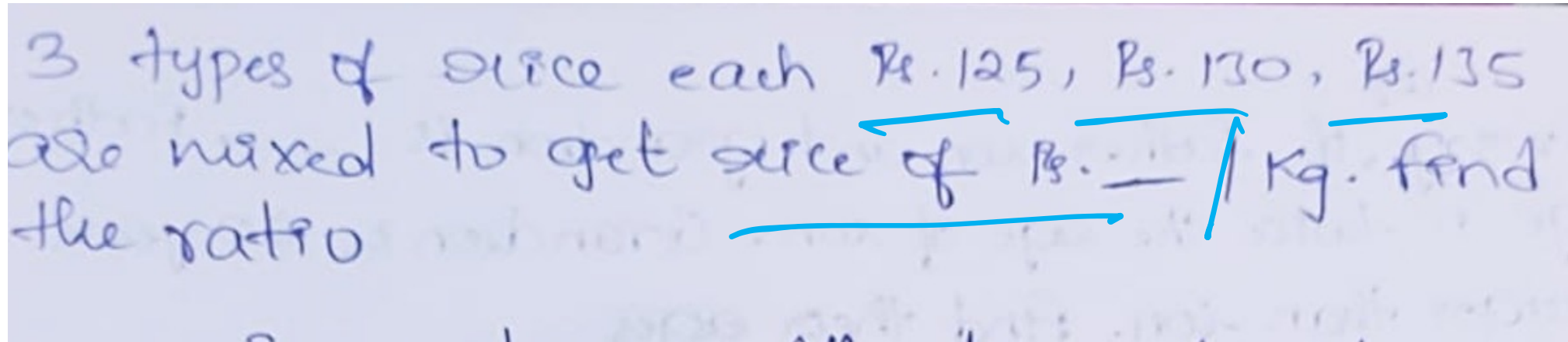
Mixture price: 153/kg

$$\frac{126 + 135 + 2x}{4} = 153$$
$$261 + 2x = 612$$
$$2x = 351$$
$$x = 175.5$$

Price of the third variety per kg is Rs. 175.50.

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3 types of rice each Rs. 125, Rs. 130, Rs. 135
are mixed to get rice of Rs. — / Kg. find
the ratio