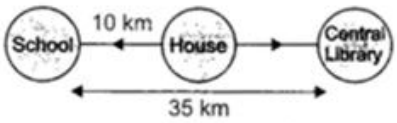
Solution of the day/ August 23, 2019

6th Class

- **Mathematics:** Ans : (B)



Distance between the house and the central library = (35 – 10) km = 25 km

- **Physics:** Ans: (A)
- **Chemistry:** Ans: (D)
- **Biology:** Ans: (D)

7th Class

- **Mathematics :** Ans : (A)

Box A = x kg

Box B = x + 3½ kg

Box C = x + 3½ + 5½

A + B + C = 60½

$$x + x + 3\frac{1}{2} + x + 3\frac{1}{2} + 5\frac{1}{2} = 60\frac{1}{2}$$

$$2x + 12\frac{1}{2} = 60\frac{1}{2}$$

3x = 48

x = 16

A = 16 kg

$$B = 16 + \frac{7}{2} = \frac{39}{2}\text{kg}$$

$$C = \frac{39}{2} + \frac{11}{2} = \frac{50}{2} = 25 \text{ kg.}$$

- **Physics:** Ans: (B)
- **Chemistry:** Ans: (B)
- **Biology:** Ans: (D)

8th class

- **Mathematics:** Ans: (A)

$$\frac{x}{5} = \frac{y}{2} = k$$

$$x = 5k, y = 2k$$

$$\therefore \frac{8x + 9y}{8x + 2y} = \frac{40k + 18k}{40k + 4k} = \frac{58}{44} = \frac{29}{22}$$

- **Physics:** Ans : (C)

- **Chemistry:** Ans: (C)

$Mn + 2HNO_3(dil.) \rightarrow Mn(NO_3)_2 + H_2$

- **Biology:** Ans: (A)

9th Class

- **Mathematics :** Ans : (C)

If each observation is divided by 'x' ($x \neq 0$) and increased by 'y' then the new mean $= \frac{m}{x} + y$

- **Physics:** Ans : (A)

- **Chemistry:** Ans: (D)

- **Biology:** Ans: (B)

10th class

- **Mathematics:** Ans : (D)

Let x be the sum of money in rupees and y be the number of men.

Each man gets x/y.

If there were 3 men fewer, each would get Rs. $\frac{x}{y-3}$

If there were 6 men more, each would get Rs. $\frac{x}{y+6}$

Hence from the condition of the problem

$\frac{x}{y-3} = \frac{x}{y} + 150$ _____(1) and $\frac{x}{y+6} = \frac{x}{y} - 120$ _____(2)

from (1) , $150 = x\left(\frac{1}{y-3} - \frac{1}{y}\right) = \frac{3x}{y^2 - 3y} \therefore x = 50\left(y^2 - 3y\right)$

from (2) , $120 = x\left(\frac{1}{y} - \frac{1}{y+6} -\right) = \frac{6x}{y^2 + 6y} \therefore x = 20\left(y^2 + 6y\right)$

Hence $50(y^2 - 3y) = 20(y^2 + 6y) \Rightarrow 30y^2 = (150 + 120)y = 270y$

$\therefore y = 9$

$\therefore x = 20(81 + 54) = 20 \times 135 = 2700$

Thus, there are 9 men and a sum of Rs. 2700.

- **Physics:** Ans: (A)
- **Chemistry:** Ans: (B)
- **Biology:** Ans: (A)
- **Reasoning :** Ans: (A)