

Task

③

$$F = 32 + C$$

$$\Rightarrow C = \frac{F}{3}$$

we know that $C = \frac{5}{9}(F - 32)$

$$\Rightarrow \frac{F}{3} = \frac{5}{9}(F - 32)$$

$$\Rightarrow F = \frac{5}{3}(F - 32) \Rightarrow 3F = 5(F - 32)$$

$$\Rightarrow 3F = 5F - 160$$

$$\Rightarrow 2F = 160 \Rightarrow F = 80^\circ F$$

④

$$C = \frac{1}{10} F$$

From $C = \frac{5}{9}(F - 32)$

$$\Rightarrow C = \frac{5}{9}(10C - 32)$$

$$\Rightarrow 9C = 50C - 160 \Rightarrow 41C = 160$$

$$\Rightarrow C = 3.9^\circ C$$

⑤

For $C = 60^\circ$ and Given $F = 140^\circ F$

we know $C = \frac{5}{9}(F - 32)$

$$\Rightarrow \frac{12}{60} = \frac{5}{9}(F - 32) \Rightarrow 12 = \frac{1}{9}(F - 32)$$

$$\Rightarrow 12 \times 9 = F - 32$$

$$\Rightarrow 108 = F - 32 \Rightarrow F = 108 + 32 = 140^\circ F$$

$$\text{Error in measurement} = 141^\circ F - 140^\circ F = 1^\circ F$$

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$$k = 20k$$

$$\text{We know that } k = 273 + C$$

$$= 20k = 273 + C$$

$$= 20 - 273 = -253^\circ C$$

$$\text{We know that } C = \frac{5}{9} (F - 32)$$

$$\Rightarrow -253 = \frac{5}{9} (F - 32)$$

$$\Rightarrow -50.6 = \frac{1}{9} (F - 32)$$

$$\Rightarrow F - 32 = -50.6 \times 9$$

$$\Rightarrow F - 32 = -455.4$$

$$\Rightarrow F = -455.4 + 32$$

$$= -423.4^\circ F$$

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$$L.F.P = 3^\circ; \quad U.F.P = 102^\circ$$

$$O = 80^\circ$$

$$\text{From } \frac{O - L.F.P}{U.F.P - L.F.P} = \frac{C - L.F.P}{U.F.P - L.F.P}$$

$$\Rightarrow \frac{80 - 3}{102 - 3} = \frac{C - 0}{100 - 0} \Rightarrow \frac{77}{99} = \frac{C}{100}$$

$$\Rightarrow C = 100 \times \frac{77}{99} = 100 \times \frac{7}{9} = 11.11 \times 7 = 77.77 = 77.8^\circ C$$

Advanced

8

(a) $C = 50^\circ C$
 $k = 273 + C$
 $= 273 + 50$
 $= 323k$

(a) $C = \frac{5}{9} (F - 32)$
 $\Rightarrow 50 = \frac{5}{9} (F - 32)$
 $\Rightarrow 10 = \frac{1}{9} (F - 32)$
 $\Rightarrow 90 = F - 32 \Rightarrow F = 122^\circ F$

(b) $C = \frac{5}{4} \times R$
 $R = \frac{4}{5} \times C = \frac{4}{5} \times 50$
 $R = 40^\circ R$



Advanced

(2)

Take

L Tank Jee main
level ques how
7th foundation
Topic match

(7)

Given $k = 200 \text{ K}$.

We know $k = 273 + c$

$$\Rightarrow 200 = 273 + c$$

$$\Rightarrow c = 200 - 273 = -73^\circ\text{C}$$

(8)

$$c = 37^\circ\text{C}$$

$$k = 273 + c = 273 + 37 = 310^\circ\text{K}$$

(9)

$$F = 100^\circ\text{F}$$

we know

$$\frac{F - 32}{180} = \frac{R}{80}$$

$$\Rightarrow \frac{100 - 32}{180} = \frac{R}{80} \Rightarrow R = 4 \times \frac{68}{9}$$

$$= 4 \times 7.5$$

$$= 30.2^\circ\text{R}$$

(10)

$$100^\circ\text{C}$$

$$k = 273 + c$$

$$= 273 + 100$$

$$= 373^\circ\text{K}$$

$$\text{we know } \frac{c}{5} = \frac{R}{4}$$

$$\Rightarrow \frac{100}{5} = \frac{R}{4}$$

$$\Rightarrow R = 20 \times 4 = 80^\circ\text{R}$$

$$c = \frac{5}{9} (F - 32)$$

$$\Rightarrow \frac{20}{5} = \frac{F - 32}{9}$$

$$\Rightarrow 20 = \frac{F - 32}{9}$$

$$\Rightarrow 180 = F - 32 \Rightarrow F = 212^\circ\text{F}$$



Task

SAQ's

(1)

Given $C = 25^{\circ}\text{C}$

we know $C = \frac{5}{9} (F - 32)$

$$\Rightarrow \frac{5}{25} = \frac{5}{9} (F - 32)$$

$$\Rightarrow 5 = \frac{1}{9} (F - 32) \Rightarrow F - 32 = 9 \times 5$$

$$\Rightarrow F - 32 = 45$$

$$\Rightarrow F = 77^{\circ}\text{F}$$

(2)

$$L.F.P = 4^{\circ}\text{C} ; U.F.P = 94^{\circ}\text{C}$$

we know
$$\frac{\theta_1 - L.F.P}{U.F.P - L.F.P} = \frac{\theta_2 - L.F.P}{U.F.P - L.F.P}$$

$$\Rightarrow \frac{C - 4}{94 - 4} = \frac{C - 0}{100 - 0} \Rightarrow \frac{C - 4}{90} = \frac{C}{100}$$

$$\Rightarrow 10(C - 4) = 9C \Rightarrow 10C - 40 = 9C$$

$$\Rightarrow C = 40^{\circ}\text{C}$$

(3)

7th ws-4 Integrated

③ & ⑦

L T a b J e e m a i n s l e v e l

$$L \cdot F \cdot P_1 = 5^\circ\text{C} \quad U \cdot F \cdot P_1 = 95 \quad \theta = 59^\circ\text{C}$$

on celsius scale $L \cdot F \cdot P_2 = 0^\circ\text{C} \quad ; \quad U \cdot F \cdot P_2 = 100^\circ\text{C}$

From the relation

$$\frac{\theta - L \cdot F \cdot P_1}{U \cdot F \cdot P_1 - L \cdot F \cdot P_1} = \frac{C - L \cdot F \cdot P_2}{U \cdot F \cdot P_2 - L \cdot F \cdot P_2}$$

$$\Rightarrow \frac{59 - 5}{95 - 5} = \frac{C - 0}{100 - 0} \Rightarrow \frac{54}{90} = \frac{C}{100}$$

$$\Rightarrow C = 60^\circ\text{C}$$

⑧

Given $F = 2C$

we know that $C = \frac{5}{9} (F - 32)$

$$\Rightarrow C = \frac{5}{9} (2C - 32)$$

$$\Rightarrow 9C = 5(2C - 32)$$

$$\Rightarrow 9C = 10C - 160$$

$$\Rightarrow \underline{C = 160^\circ\text{C}}$$