

## CHAPTER 11 : SPEED ,TIME AND DISTANCE

### EX :- 11 A

1. distance = 186 km

time = 2 hours 35 min

$$= 2\frac{35}{60} = 2\frac{7}{12} = \frac{31}{12}\text{hrs}$$

$$\text{speed} = \frac{\text{distance}}{\text{time}} = \frac{186}{31/12} = 186 \times \frac{12}{31} = 6 \times 12 = 72 \text{ km /hrs .}$$

ans :- speed = 72 km/hrs .

4 . speed = 12 km/hr time = 35 min =  $\frac{35}{60} = \frac{7}{12}$ hrs

distance = speed x time

$$= 12 \times \frac{7}{12} = 7 \text{ km (ans )}$$

6 . Distance = 1.5 km Time = 5 min =  $\frac{5}{60} = \frac{1}{12}$ hrs

$$\text{speed} = \frac{\text{distance}}{\text{time}} = \frac{1.5}{\frac{1}{12}} = 1.5 \times 12 = 18.0 \text{ km/hr.}$$

8. i) 36 km/hr

$$= 36 \times \frac{5}{18} = 2 \times 5 = 10 \text{ m/sec}$$

iii) 9 km/hr

$$= 9 \times \frac{5}{18} = \frac{5}{2} = 2\frac{1}{2} \text{ m/sec.}$$

9. change to km/hr :

ii) 7.5m/sec

$$= 7.5 \times \frac{18}{5} = 1.5 \times 18 = 27 \text{ km/hr}$$

iii) 1m/sec

$$= 1 \times \frac{18}{5} = 3\frac{3}{5} \text{ km/hr.}$$

10. Distance = 120 m time = 5 sec

$$\text{speed} = \frac{\text{distance}}{\text{time}} = \frac{120}{5} = 24 \text{ m/sec}$$

In km/hr

$$24 \times \frac{18}{5} = \frac{432}{5} = 86\frac{2}{5} \text{ km/hr .}$$

12. speed = 24 km/hr distance = 720 m

$$= 24 \times \frac{5}{18} = \frac{20}{3} \text{ m/sec}$$

$$\text{time} = \frac{\text{distance}}{\text{speed}} = \frac{720}{\frac{20}{3}} = 720 \times \frac{3}{20} = 108 \text{ sec} = \frac{108}{60} = 1 \text{ min } 48 \text{ sec}$$

13. 1st part

$$\begin{aligned}\text{speed} &= 45 \text{ km/hr} \quad \text{Time} = 6 \text{ hrs} \\ \text{Distance} &= \text{speed} \times \text{time} \\ &= 45 \times 6 \\ &= 270 \text{ km} .\end{aligned}$$

2nd part

$$\text{Distance} = 270 \text{ km}$$

$$\text{Time} = 5 \text{ hrs}$$

$$\text{Speed} = \frac{\text{distance}}{\text{time}} = \frac{270}{5} = 54 \text{ km/hr}$$

14 . 1st part

$$\text{Time} = 40 \text{ min} = \frac{40}{60} = \frac{2}{3} \text{ hrs.} \quad \text{speed} = 54 \text{ km/hr}$$

$$\text{Distance} = \text{Speed} \times \text{time}$$

$$= 54 \times \frac{2}{3} = 36 \text{ km}$$

II nd part :

$$\text{distance} = 36 \text{ km}$$

$$\text{speed} = 45 \text{ km/hr}$$

$$\text{time} = \frac{\text{distance}}{\text{speed}} = \frac{36}{45} = \frac{4}{5} \text{ hrs} = \frac{4}{5} \times 60 = 48 \text{ min} .(\text{Ans} )$$