

Physics

Class : IX

1. $72 \text{ kmph} = 72 \times \frac{5}{18} \text{ ms}^{-1}$

$$v = 20 \text{ ms}^{-1}$$

$$t = 5 \text{ min} = 300 \text{ s}$$

$$a = \frac{v}{t} = \frac{20}{300} \text{ ms}^{-2} = \frac{1}{15} \text{ ms}^{-2}$$

$$s = \frac{1}{2} at^2$$

$$= \frac{1}{2} \times \frac{1}{15} \times 9 \times 10^4 \text{ m}$$

$$= \frac{90}{30} \times 10^3 \text{ m} = 3 \text{ km}$$

Ans. (A)

2. mass is same

Ans. (D)

3. (A) (B) (C) (D)

4. (A) (B)

5. (A) (B) (C)

6. $S_7 = \frac{1}{2}(7+2)25 = \frac{225}{2}$

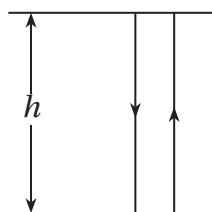
$$S_3 = \frac{1}{3} \times 3 \times 25 = \frac{25}{2}$$

$$\frac{S_7}{S_3} = \frac{3}{1}$$

Ans. (A)

7. (D)

8.



$$t = 3 \text{ s}$$

$$v = 1530 \text{ ms}^{-1}$$

$$2h = vt$$

$$\Rightarrow h = \frac{vt}{2} = \frac{1530 \times 3}{2} = 765 \times 3 = 2295 \text{ m}$$

Ans. (B)

9. (D)

10. $\lambda = 600 \text{ nm} = 6 \times 10^{-7} \text{ m}$
 $c = 3 \times 10^8 \text{ ms}^{-1}$



$$v = \frac{c}{\lambda} = \frac{3 \times 10^8}{6 \times 10^{-7}} = 5 \times 10^{14} \text{ Hz}$$

Ans. ③

11. $\frac{1}{2}mv^2 = mgh$

$$v = \sqrt{2gh}$$

Ans. ①

12. ③

13. ④

14. $M > m$

$$\frac{M}{m} > 1$$

$$MV = mv \quad \therefore \frac{V}{v} < 1$$

$$K = \frac{1}{2}MV^2$$

$$k = \frac{1}{2}mv^2$$

$$\frac{K}{k} = \frac{MV \cdot V}{mv \cdot v} < 1$$

$$K < k$$

Ans. ③

15. ①