



DIRECTORATE OF SCHOOL EDUCATION TAMILNADU

12NPCB03 (2023-24)	NEET PRACTICE QUESTIONS (TEST-3)	Class : XII Time : 1.15 hrs Total Marks : 240
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Answer key

12TH Physics

1. D)

$$1.6 \times 10^{-5} \Omega m$$

$$V_d = 2.5 \times 10^{-4} \text{ ms}^{-1}, \quad n = 8 \times 10^{28} / \text{m}^2$$

$$I = n_e A V_d$$

$$P = \frac{V}{n_e V_d l} = 1.6 \times 10^{-5} \Omega m$$

2. A)R

$$\frac{1}{R_{AB}} = \frac{1}{R_1} + \frac{1}{R_2} = \frac{1}{2R} + \frac{1}{2R}$$

$$\frac{1}{R_{AB}} = \frac{2}{2R} \rightarrow R_{AB} = R$$

3. B)

$$n^2 R$$

$$l^1 = nl \Rightarrow l^1 / l$$

$$V = lA = l^1 A^1 \quad A^1 = \frac{Al}{l^1} = \frac{A}{n}$$

$$R^1 = \frac{Pl^1}{A^1} = \frac{P(nl)}{\left(\frac{A}{n}\right)} = n^2 P \frac{L}{A} = n^2 R$$

$$\left(R = \frac{PL}{A} \right)$$

4. B) 0.5A

Hint use Kirchoff's law solve the Problem

5. A) 0.5A

$$R_{eq} = \frac{30 \times 15}{30 + 15} = 10\Omega$$

$$I = \frac{5}{10} = 0.5A$$

6. B)

$$Emf = E = I(R + r)$$

$$E = \frac{1}{2}(2 + r)$$

$$2E = 2 + r \quad (1)$$

$$E = \frac{1}{4}(5 + r)$$

$$4E = 5 + r \quad (2)$$

$$E = \frac{3}{2} = 1.5V$$

7. C) 9V

$$V = E - ir = 12 - 60 \times 5 \times 10^{-2} = 9V$$

8. D) $\frac{13L}{24}$

$$i = \frac{E}{13r} = \left(\frac{x}{L} \cdot 12r \right) = \frac{E}{2}$$

$$x = \frac{13L}{24}$$

9. B)

$$S = ut + \frac{1}{2}gt^2$$

$$500 = (100)t + \frac{1}{2}(9.8)t^2$$

$$500 = 100t + 4.9t^2$$

$$t = 4.15s$$

10. D)

$$v^2 - u^2 = 2gh$$

$$v^2 = u^2 + 2gh$$

$$v^2 = 30^2 + 2 \times 10 \times 80$$

$$v = 50ms^{-1}$$

11. D)

Angle of Projection increases the range decreases

So at 60° the range will be minimum

12. A)

$$V = u \cos \theta$$

$$V = \frac{u}{2}$$

$$\therefore \frac{u}{2} = u \cos \theta, \quad \cos \theta = \frac{1}{2}, \quad \theta = 60^\circ$$

13. A) Time taken to reach the maximum height

$$t_m = \frac{u \sin \theta}{g}$$

$$\text{Time of flight } T_f = \frac{2u \sin \theta}{g}$$

$$T_f = 2t_m$$

14. B) A. Parabola

A Particle moves with constant acceleration in a different from initial Velocity.

15. B) 2S

$$T = \sqrt{\frac{2H}{g}} = \sqrt{\frac{2 \times 19.6}{9.8}} = 2S$$



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8. D) 20 m

$$H = \frac{u^2}{2g}$$

$$R = \frac{u^2}{g}$$

$$R = \frac{R}{2} = 2 \times 10$$

$$R = 20 \text{ m}$$

9. A) $R_{30^\circ} = R_{60^\circ}$

$$R_{30^\circ} = \frac{u^2 \sin 2(30^\circ)}{g} = \frac{u^2 \sin 60^\circ}{g} = \frac{\sqrt{3}u^2}{2g}$$

$$R_{60^\circ} = \frac{u^2 \sin 2(60^\circ)}{g} = \frac{u^2 \sin 120^\circ}{g} = \frac{u^2 \sin(180^\circ - 60^\circ)}{g}$$

$$= \frac{u^2 \sin 60^\circ}{g} = \frac{\sqrt{3}u^2}{2g}$$

10. D) Exactly in hand trough which it up

The ball has forward Velocity equal to the Velocity of the car even when ball is given Velocity upwards

11. B) 5 cm above the target

$$t = \frac{100}{1000} = \frac{1}{10} = 0.15$$

$$S = \frac{1}{2}gt^2 = 0.15$$

$$= \frac{1}{2} \times 10 \times (0.1)^2 = 5cm$$

12. B) -9

$$\text{Total height } h = 0.2 \times n = 0.2n$$

$$h = u_y t + \frac{1}{2}gt^2 = 5t^2 \quad (1)$$

$$R = u_x t = 4.5t \quad (2)$$

$$\frac{2}{3} = \frac{50t}{45}, \quad t = 0.6S \quad (1) \div \text{by } (2)$$

$$T = 0.6S \text{ sub in } \quad (2)$$

$$\therefore 0.3n = 4.5 \times 0.6 = 2.7$$

$$\rightarrow n = \frac{2.7}{0.3} = 9$$

13. D) $R_{\max} = 4H_{\max}$

$$R = \frac{u^2 \sin 2\theta}{g}, \quad H = \frac{u^2 \sin^2 \theta}{2g}$$

$$R_{\max} = \frac{u^2}{g}, \quad \theta = 45^\circ, \quad H = \frac{u^2 (\sin 45^\circ)^2}{g} = \frac{u^2}{4g}$$

$$\frac{R_{\max}}{H_{\max}} = \frac{\frac{u^2}{g}}{\frac{u^2}{4g}} = 4$$

$$\frac{R_{\max}}{H} = 4$$

14. A) 1 : 1

$$\frac{R_1}{R_2} = \frac{\sin(2 \times 35^\circ)}{\sin 2(55^\circ)} = \frac{\sin 70^\circ}{\sin 110^\circ} = \frac{\sin 70^\circ}{\sin(180^\circ - 70^\circ)}$$

$$\frac{R_1}{R_2} = \frac{\sin 70^\circ}{\sin 70^\circ} = 1 : 1$$

15. C) 60m

$$H_{\max} = \frac{u^2 \sin^2 \theta}{2g} = 60m$$

$$H_{\max} = \frac{40^2 \times \sin(60^\circ)^2}{2g} = \frac{1600 \times 3}{2 \times 10 \times 4} = 60m$$



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