

Yakeen NEET 2.0 2026

Physics By Saleem Sir

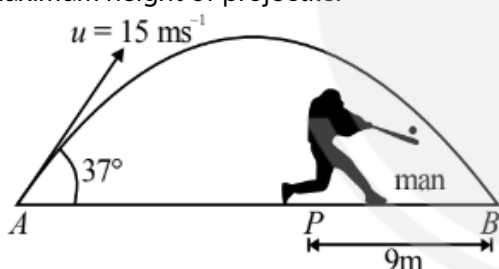
DPP: 1

Motion in a Plane

Q1 A stone is projected from the ground with velocity 25 m/s . Two seconds later, it just clears a wall 5 m high. The angle of projection of the stone is ($g = 10 \text{ m/sec}^2$)

- (A) 30°
(B) 45°
(C) 50.2°
(D) 60°

Q2 A ball is hit by a batsman at an angle of 37° as shown in figure. The man standing at P should run at what minimum velocity so that he catches the ball before it strikes the ground. Assume that height of man is negligible in comparison to maximum height of projectile.



- (A) 3 ms^{-1}
(B) 5 ms^{-1}
(C) 9 ms^{-1}
(D) 12 ms^{-1}

Q3 A particle projected from ground moves at angle 45° with horizontal one second after projection and speed is minimum two seconds after the projection. The angle of projection of particle is [Neglect the effect of air resistance]

- (A) $\tan^{-1}(3)$
(B) $\tan^{-1}(2)$
(C) $\tan^{-1}(\sqrt{2})$
(D) $\tan^{-1}(4)$

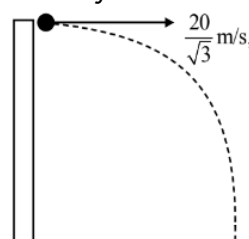
Q4 A body is thrown horizontally from the top of a tower of height 5 m . It touches the ground at a distance of 10 m from the foot of the tower. The initial velocity of the body is ($g = 10 \text{ m/s}^2$)

- (A) 2.5 m/s
(B) 5 m/s
(C) 10 m/s
(D) 20 m/s

Q5 A bomber plane moves horizontally with a speed of 500 m/s and a bomb released from it, strikes the ground in 10 sec . Angle at which it strikes the ground will be ($g = 10 \text{ m/s}^2$)

- (A) $\tan^{-1}\left(\frac{1}{5}\right)$
(B) $\tan^{-1}\left(-\frac{1}{5}\right)$
(C) $\tan^{-1}(1)$
(D) $\tan^{-1}(5)$

Q6 A particle is projected horizontally with a speed of $\frac{20}{\sqrt{3}} \text{ m/s}$, from some height at $t = 0$. At what time will its velocity make 60° angle with the initial velocity ?



- (A) 1 sec
(B) 2 sec
(C) 1.5 sec
(D) 2.5 sec

Q7 From the top of a tower 19.6 m high, a ball is thrown horizontally. If the line joining the point of projection to the point where it hits the ground



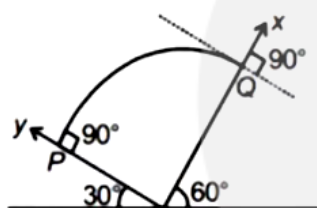
makes an angle of 45° with the horizontal, then the initial velocity of the ball is:

- (A) 9.8 m/s
- (B) 4.9 m/s
- (C) 14.7 m/s
- (D) 2.8 m/s

Q8 A particle is projected horizontally with a speed of $\frac{20}{\sqrt{3}}$ m/s from some height at $t=0$. What will be the displacement of the particle in x-direction when its velocity makes 60° angle with the initial velocity ?

- (A) $\frac{20}{\sqrt{3}}m$
- (B) $\frac{40}{\sqrt{3}}m$
- (C) $\frac{50}{\sqrt{3}}m$
- (D) $\frac{10}{\sqrt{3}}m$

Q9 Two incline plane of angle 30° and 60° are placed touching each other at the base as shown in the figure. A projectile is projected with speed of $10\sqrt{3} \text{ ms}^{-1}$ from point P as shown and hits the other inclined at point Q normally.



If the co-ordinate are taken along the inclines as shown in the figure, then The speed with which the projectile hits the inclined at Q is

- (A) 5 ms^{-1}
- (B) 10 ms^{-1}
- (C) $10\sqrt{3} \text{ ms}^{-1}$
- (D) 20 ms^{-1}



Answer Key

Q1 (A)

Q2 (B)

Q3 (B)

Q4 (C)

Q5 (B)

Q6 (B)

Q7 (A)

Q8 (B)

Q9 (B)



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