Yakeen NEET 2.0 2026

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DPP: 02

Motion in a Plane

Q1 The range of a particle when launched at an angle of 15° with the horizontal is $1.5\ \text{km}$. What is the range of the projectile when launched at an angle of 45° to the horizontal
(A) $1.5\ \text{km}$
(B) $3.0\ \text{km}$
(C) $6.0\ \text{km}$
(D) $0.75\ \text{km}$

Q2 A projectile fired with initial velocity u at some angle θ has a range R. If the initial velocity be doubled at the same angle of projection, then the range will be
(A) 2R
(B) $\text{R}/2$
(C) R
(D) 4R

Q3 If the initial velocity of a projectile be doubled, keeping the angle of projection same, the maximum height reached by it will
(A) Remain the same
(B) Be doubled
(C) Be quadrupled
(D) Be halved

Q4 During projectile motion, acceleration of a particle at the highest point of its trajectory is
(A) g
(B) Zero
(C) less than g
(D) dependent upon projection velocity

Q5 The maximum range of a projectile is $22\ \text{m}$. When it is thrown at angle of 15° with the horizontal, its range will be-
(A) $22\ \text{m}$
(B) $6\ \text{m}$
(C) $15\ \text{m}$
(D) $11\ \text{m}$

Q6 The angle of projection of a body is 15°. The other angle for which the range is the same as the first one is equal to
(A) 30°
(B) 45°
(C) 60°
(D) 75°

Q7 Two objects are thrown up at angles of 45° and 60° respectively, with the horizontal. If both objects attain same vertical height, then the ratio of magnitude of velocities with which these are projected is ;
(A) $\sqrt{\frac{5}{3}}$
(B) $\sqrt{\frac{3}{5}}$
(C) $\sqrt{\frac{2}{3}}$
(D) $\sqrt{\frac{3}{2}}$

Q8 For an object projected from ground with speed u, horizontal range is two times the maximum height attained by it. The horizontal range of object is

(A) $\frac{2u^2}{3g}$
(B) $\frac{3u^2}{4g}$
(C) $\frac{3u^2}{2g}$
(D) $\frac{4u^2}{5g}$

Q9 The velocity at the maximum height of a projectile is $\frac{\sqrt{3}}{2}$ times its initial velocity of projection (u). Its range on the horizontal plane is
(A) $\frac{\sqrt{3}u^2}{2g}$
(B) $\frac{3u^2}{2g}$
(C) $\frac{3u^2}{g}$
(D) $\frac{u^2}{2g}$

Q10 A projectile is thrown into space so as to have a maximum possible horizontal range of 400 metres. Taking the point of projection as the origin, the co-ordinates of the point where the velocity of the projectile is minimum are ;
(A) $(400, 100)$
(B) $(200, 100)$
(C) $(400, 200)$
(D) $(200, 200)$

Answer Key

Q1	(B)	Q6	(D)
Q2	(D)	Q7	(D)
Q3	(C)	Q8	(D)
Q4	(A)	Q9	(A)
Q5	(D)	Q10	(B)