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Q1. A ball is projected with velocity 10 m/sec at angle of 30^o with the horizontal surface. The speed of the ball after 1 second will be (Use $g=10m/sec^2$)

a. 5 m/sec
b. 20 m/sec
c. 8 m/sec
d. 10 m/sec
e. 12 m/sec

Q2. A ball is projected with velocity 10 m/sec at angle of 30^o with the horizontal surface. The time taken by ball to reach the ground is

a. 1 sec
b. 2 sec
c. 3 sec
d. 4 sec
e. 5 sec

Q3. A ball is projected with velocity 10 m/sec at angle of 30^o with the horizontal surface. The range of the projectile is

a. 10 m
b. $10\sqrt{3}$m
c. $20\sqrt{3}$m
d. $30\sqrt{3}$m
e. $40\sqrt{3}$m

Q4. A ball is projected with velocity 10 m/sec at angle of 30^o with the horizontal surface. The maximum height attained by the projectile is

a. 5 m
b. 10 m
c. 15 m
d. 20 m
e. 25 m

Q5. A ball is projected with velocity 10 m/sec at angle of 30^o with the horizontal surface. The angle made by the line joining point of projection with the point of maximum height is

a. $\tan^{-1} 2/\sqrt{3}$

b. $\tan^{-1} 1/2\sqrt{3}$
c. $\tan^{-1} \sqrt{3}$
d. $\tan^{-1} 1/\sqrt{3}$
e. $\tan^{-1}\sqrt{3}/2$

Q6. The angle of projection for the range of projectile to be equal to its maximum height is

a. $\theta=\tan^{-1}(2)$
b. $\theta=\tan^{-1}(3)$
c. $\theta=\tan^{-1}(4)$
d. $\theta=\tan^{-1}(2/\sqrt{3})$
e. $\theta=\tan^{-1}(1/\sqrt{3})$

Q7.For a projectile fired with a certain velocity, the Maximum possible Range and the Maximum height attainable are related as

a. $R_{max}=2H_{max}$
b. $R_{max}=H_{max}/2$
c. $R_{max}=3H_{max}$
d. $R_{max}=H_{max}$
e. $R_{max}=-H_{max}$

Q8. A ball projected at an angle θ, attains a maximum height H_1 and if the ball is projected at angle of (90-θ) and the maximum height attained by the ball is H_2.
Then the range of projectile will be

a. $R= \sqrt{H_1H_2}$
b. $R= \sqrt{H_1H_2} /2$
c. $R= 2\sqrt{H_1H_2}$
d. $R= 3\sqrt{H_1H_2}$
e. $R= \sqrt{H_1H_2}/3$

Q9. The motion of a projectile is described by the equation $y=ax - bx^2$. The range of projectile is

a. a^2/b^2
b. $a/2b$
c. $2a/b$
d. a/b

Q10. A body is projected with kinetic energy E so as to attain maximum horizontal range. Its potential energy at the highest point is

a. E
b. E/2
c. 2E
d. $\sqrt{2}$E