ETHIO NATIONAL SCHOOL

2020 G.C 4TH QUARTER physics worksheet for GRADE 12

I. <u>Choose the correct answer for each of the following questions</u>.

1. Two projectiles are projected with the same velocity. If one is projected at an angle of 30^o and the other at 60^o to the horizontal, then the ratio of maximum heights reached is

   A. 3:1 B.1:3 C. 1:2 D.2:1

2. A particle is projected making an angle of 45^o with the horizontal having kinetic energy **k** . The kinetic energy at the highest point will be

   A. K/√2 B. K/2 C. 2K D. K

3. Two particles of the same mass and with the same velocity are thrown at an angle of 30^o and 60^o with the horizontal. Which will remain the same?

   A. Time of flight C. max.height

   B. Range of projectile D. All of them

4. A bomb is dropped from ab aeroplanes moving horizontally at a constant speed . When air resistance is taken into consideration, then the bomb

   A. flies with the aeroplanes

   B. falls on earth ahead of aeroplanes

   C. falls on earth behind aeroplanes

   D falls on earth exactly below aeroplane

5. A ball is thrown with a velocity of 9.8m/s making an angle of 30^o with the horizontal. It will hit the ground after a time....sec

   A.3 B. 2 C.1.5 D.1

6. A ball is projected horizontally with a velocity of 4m/s. The velocity of the ball after

   0.7sec(g=10m/s) is

   A.10m/s B.11m/s C.8 m/s D.3m/s

7. At the top of the trajectory of a projectile , the acceleration is

   A. maximum B. Minimum C. zero D. g(gravity)

8. A stone released with zero velocity from the top of the tower reaches the ground in 4sec. The height of the tower is about

   A.20m B. 40m C. 80m D. 160m

9. The horizontal range is 4 times the maximum height attained by a projectile. The angle of projection is

   A.90^o B. 60^o C. 45^o D.30^o

10. A person aims a gun at a bird from a point at a horizontal distance of 100m. If the gun can impart a speed of 500m/s to the bullet, at what height above the bird must he aim his gun in order to hit it? Take g=10m/s

    A. 10cm B. 20cm C.50cm D. 100cm

II. **<u>Answer the following questions accordingly.</u>**

1. Write two practical examples of motion in a plane
2. What is projectile?
3. In long jump, which factors determine the span of the jump?
4. What assumptions are made in the treatment of projectile motion?
5. A projectile is fired at an angle **a** to the horizontal. Derive the expression for

   i. time of flight

   ii. maximum height attained and

   iii. horizontal range