Exercise: Chapter 3

Answer ALL questions. (15 Marks)

1.   For any value of initial velocity, the minimum range of projectile is obtained by throwing
        it at an angle of:
        (a) 0° and 90°
        (b) 30° and 60°
        (c) 40° and 50°
        (d) 45°

2.   At the uppermost point of projectile, its velocity and acceleration are at an angle of:
        (a) 180°
        (b) 90°
        (c) 0°
        (d) 270°

3.   A ball is thrown in vertically upward direction. Neglecting the air resistance, acceleration
        of a ball will be:
        (a)   zero
        (b)   continuously increasing
        (c)   remains constant
        (d)   increases when the ball is going up and will decreases when it is coming down

4.   A Malaysia rescue team drops a package of supplies to a stranded climber by helicopter.
        The helicopter is flying at 40.0 m/s horizontally at a height, h of 1.00×10^2 m from the
        land. Determine the position at which the supplies arrive on the land relative its point
        released.

                                                                                          (4 Marks)

5. A rock is thrown upward from the roof of a house at an angle of 30.0º to the horizontal with an initial speed of 20.0 m/s from the release point equal to 45.0 m above the ground.

   (i)   Find the time when the rock reached the highest point.

   (ii)   How long does it take for the rock to strike the ground?

   (iii) Find the horizontal range of the rock.

   Neglect air resistance.

   (8 Marks)

Answer:
   1. C
   2. C
   3. D
   4. 309.87 km, 57.14º
   5. 15.5 km