.$s_x = u_x t + \frac{1}{2} a_x t^2$

or, $x = ucos\theta t + 0 \; [\therefore a_x = 0]$

-$\therefore t = \frac{x}{ucos\theta} \ldots \ldots \ldots \ldots \ldots (1)$

At 'y' direction

.$s_y = u_y t + \frac{1}{2} a_y t^2$

or, $y = usin\theta t - \frac{1}{2} g t^2 \; [\therefore a_y = -g]$

or, $y = xtan\theta - \frac{1}{2} g \frac{x^2}{u^2 cos^2\theta}$............(2) [using equation 1 and solve]

Now, equation 2 is the equation of parabola. So, Path followed by projectile is parabolic in nature.

2)Time of flight:It is the time when projectile remains in the air.

Using equation of motion, $s = ut + \frac{1}{2} a t^2$

At y direction $s_y = u_y T + \frac{1}{2} a_y T^2$

or,$H = \frac{1}{2} g T^2$

$$\boxed{\therefore T = \sqrt{\frac{2H}{g}}}$$

3) Horizontal Range: Horizontal distance covered by projectile during its time of flight is called Range.

.$s_x = u_x t + \frac{1}{2} a_x t^2$

or, $R = uT + 0$

$$\boxed{\therefore R = u \times \sqrt{\frac{2H}{g}}}$$