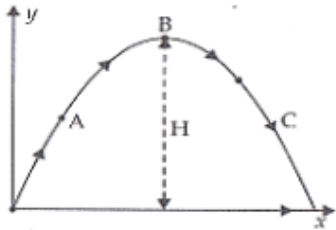# QUES 04:-

A particle is projected in the air at some angle to the horizontal, moves along the parabola as shown in the figure, where x and y indicate horizontal and vertical directions respectively. Show in the diagram, direction of velocity and acceleration at points A, B and C.

Sol. The motion of projectile is always parabolic or its part. Its velocity at any point of its path is always tangentially toward the direction of motion so velocities at points A, B and C are tangentially shown, The point B is at its maximum height of trajectory. So the vertical component of B $v_y = 0$ and horizontal component is $u\cos\theta$.
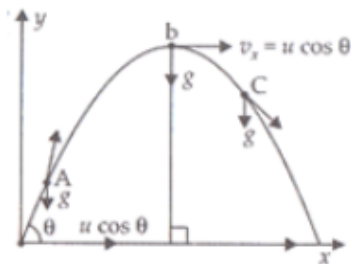
As the direction of acceleration is always in the direction of the force acting on it. The gravitational force is acting on the body hence the direction of acceleration is always vertically downward equal to acceleration to gravity (g).