

## XI Physics Worksheet

Time: 30 min

### Chapter#3 : Motion in Straight Line-01

Full Marks: 20

**Instructions:**

1. All questions are compulsory.
2. Please give the explanation for the answer where applicable.

Q1 - Explain displacement.

(2 Marks)

Q2 - A body moves through distance  $x$  from a point A to a point B and returns back to A by same path. What will be the distance and the displacement covered by the body.

(2 Marks)

Q3 - Give some important features of uniform motion.

(2 Marks)

Q4 - A jet plane is moving with a velocity of 800 km/hr. The gases are ejecting from rear of jet plane with velocity of 1600 km/hr with respect to jet. Find the velocity of gases w.r.t a person on ground.

(3 Marks)

Q5 - Draw the position time graphs for two objects initially occupying different positions but having zero relative velocity.

(3 Marks)

Q6 - Derive the equations of motion  $v = u + at$ ,  $s = ut + (1/2)at^2$ ,  $v^2 - u^2 = 2as$  by calculus.

(5 Marks)

Q7 - Can a body have Constant speed but a varying Velocity?

(1 Mark)

Q8 - What is frame of reference?

(1 Mark)

Q9 - A car and a bike with the same kinetic energy are brought to rest by the application of brakes which provide equal retarding forces. Which of them will come to rest in a shorter distance?

(1 Mark)