## L.E.E./ A.I.P.M.T. Foundation - XI Physics Worksheet

Time: 30 min Chapter\#3: Motion in Straight Line-01

## I nstructions:

## 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 $800 \mathrm{~km} / \mathrm{hr}$. The gases are ejecting from rear of jet plane with velocity of $1600 \mathrm{~km} / \mathrm{hr}$ 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 $v=u+a t, s=u t+(1 / 2) a t^{2}, v^{2}-u^{2}=2$ as 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)

