

## XI Physics Worksheet

Time: 30 min

### Chapter#5 : Laws of Motion-02

Full Marks: 20

#### **Instructions:**

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

Q1 - When a ball falls on the earth, the earth also moves up to meet it. But the motion of the earth is not noticeable. Explain why?

(2 Marks)

Q2 - Can a single isolated force exist in nature? Give reason.

(2 Marks)

Q3 - When a man jumps out of a boat, the boat is pushed away. Why?

(2 Marks)

Q4 - A body of mass  $m$  moves along  $x$ -axis such that its position co-ordinate at any instant  $t$  is  $x = at^4 - bt^3 + ct$ . Where  $a, b, c$  are constant. What is the force acting on the particle at any instant.

(3 Marks)

Q5 - Express newton's second law of motion in component form. Give its significance.

(3 Marks)

Q6 - An electric bulb suspended from the roof of a railway train by a flexible wire shifts through an angle of  $19.48^\circ$  when the train goes horizontally round a curved path of 200m radius. Find speed of train.

(5 Marks)

Q7 - Is an external force required to keep a body in uniform motion?

(1 Mark)

Q8 - Suppose you are sitting inside a van at rest. You push the van from within. will it move?

(1 Mark)

Q9 - Is force of friction independent of path?

(1 Mark)