Subject: Physics for Computer tech Date: 15/12/2025
Total Marks:30

Monthly Test

Q1) MCQs 4 x 1 = 4

(1) Which of the following is a non-contact force?

(a) Friction (b) Electrostatic force

(c) Air Resistance (d) Tension in string

(2) Conservation of linear momentum is equivalent to:

(a) Newton 1st law of motion (b) Newton 2nd law of motion

(c) Newton 3rd law of motion (d) None of these

(3) When we kick a stone, we get hurt due to:

(a) inertia (b) reaction

(c) momentum (d) velocity

(4) A lubricant is usually introduced between two surfaces to decrease friction. The lubricant:

(a) decreases temperature (b) acts as ball bearings

(c) provides rolling friction (d) prevents direct contact of the surfaces

Q2) Short Questions (Attempt any 8 Questions) (8 × 2 = 16)

1. Define terminal velocity of an object.
2. Explain why rolling friction is less than sliding friction?
3. Write any 2 methods to reduce friction.
4. What force is required to increase velocity of an 800 kg car from 10 m/s to 30 m/s in 10 seconds?
5. When a cricket ball hits high, a fielder tries to catch it. While holding the ball he draws his hands backward. Why?
6. Define impulse of force.
7. State Newton's second law of motion.
8. A 5 g bullet is fired by a gun. Velocity of bullet is 300 m/s. Mass of gun is 10 kg. Find recoil speed of gun.

9. When sitting in a car that starts accelerating from rest, why are you pushed back into the seat?

10. When someone jumps from a small boat, why does he fall into water?

Q3) Long Questions (5 × 2 = 10)

1. Define momentum and express Newton's 2nd law of motion in terms of change in momentum.

2. A cyclist weighing 55 kg rides a bicycle of mass 5 kg. He starts from rest and applies a force of 90 N for 8 seconds. Then he continues at constant speed for another 8 seconds.

Calculate total distance travelled by cyclist