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PHY-I-001
B.Sc. I Semester (NEP) Degree Examination
PHYSICS (DSC)
Mechanics and Properties of Matter

Time : 2 Hours

Maximum Marks : 60

SECTION - A

I. Answer any FIVE of the following questions.

(5×2=10)

- 1) Mention the types of error.
- 2) Give the SI Unit of linear momentum?
- 3) Define inertial frame.
- 4) What is Coriolis force?
- 5) What is rigid body? Give an example.
- 6) What is GPS?
- 7) State Hook's law.

SECTION - B

II. Answer any FOUR of the following questions.

(4×5=20)

- 8) Define surface Tension? Explain relation between surface Tension and Surface energy.
- 9) State and prove Work-energy principle.
- 10) What is bulk modulus? explain.
- 11) Derive an expression for MI of Flywheel.
- 12) State and explain parallel axis theorem.
- 13) Explain Kepler's law's of planetary motion.

SECTION - C

III. Answer any THREE of the following questions.

(3×10=30)

- 14) Derive an expression for single stage rocket? ✓
 - 15) Derive an expression for MI of a solid cylinder.
 - a) About an axis passing through its centre and perpendicular to its own axis of cylindrical symmetry. (7)
 - b) About a diameter of one of its faces. (3)
 - 16) What is torsional pendulum? Derive an expression for the torsional pendulum.
 - 17) Derive an expression for excess pressure
 - a) Inside a Air bubbles in a liquid (5)
 - b) Inside a soap bubbles (5)
 - 18) Derive an expression for co-efficient of Viscosity by poisulle's method.
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