



Shree H.N.Shukla group of colleges

PHYSICS

F.Y.B.Sc. (Sem. I) (CBCS)

Unit Test examination

PAPER- 101

UNIT - 3 , 4 : LAW OF MOTION & MECHANICS .

DATE :

Total marks :30

Instructions: All questions are compulsory.

The right side figure indicates total marks of the question.

Draw the figure wherever necessary.

Write answers of all the questions in main answer sheets.

SECTION-A

Q.1: One marks questions:

[5 MARKS]

- 1 Define : work and power.
- 2 State : Newton's second law of motion.
- 3 State work and energy theorem.
- 4 Define: conservative force.
- 5 Define : elastic collision.

SECTION – B

Q.2 (A): Short Questions: Write all three : [2 Marks each]

[6 MARKS]

- 1 Explain Newton's third law of motion.
- 2 Define potential energy and derive equation for it.
- 3 Write two main categories of collision.

Q.2 (B) : Short questions: Write all three: [3 Marks each]

[9 MARKS]

- 1 Explain : calculation of work done by constant force.
- 2 A 20 gm bullet travelling with 100 m/s penetrates 10 cm in wooden what will be average force.
- 3 Derive equation of moment of inertia for plane lamina .

Q.2 (C): Write Detail Note on [Any two]: [5 Marks each]

[10 MARKS]

- 1 State and prove the theorems of moment of inertia.
- 2 Explain escape velocity in detail.
- 3 State and prove parallel axis theorem.
- 4 Explain ; angular momentum of a rigid body.