

**UNIT- 4 – WORK, ENERGY AND POWER****I. Answer the Following (2/3 marks)**

1. Give the physical definition for work, energy and power.
2. Define Kinetic energy and potential energy.
3. State law of conservation of energy.
4. Differentiate between conservative and non – conservation forces.
5. Define Elastic and Inelastic Collisions.

**II. Answer the Following (5 marks)**

1. Explain with the Graph the difference between work done by a constant force and by a variable force.
2. State and explain work – energy (kinetic energy) principle.
3. Derive the relation between momentum and Kinetic Energy.
4. Define and drive the expression for Elastic Potential Energy.
5. Arrive at an expression for power and velocity. Give some examples for the same.
6. Explain the characteristics of elastic and Inelastic collision.
7. Define the following
  - a) Coefficient of restitution
  - b) loss of kinetic energy in inelastic collision.
8. Arrive at an expression for elastic collision in one dimension and discuss various cases.
9. What is Inelastic collision? In what way it is different from elastic collision.