

A+ COACHING POINT, DMR

Unit 4: Model Practice Questions

1. What are Conservative and non-conservative forces. Give one example of each.
2. Define coefficient of restitution.
3. Cite two differences between elastic collision and inelastic collision. Give examples too.
4. Show that instantaneous power $P = \vec{F} \cdot \vec{v}$
5. What is the elastic potential energy of a stretched spring? Find an expression for it.
6. Show that in an elastic one dimensional collision, the relative velocity of approach before collision is equal to the relative velocity of separation after collision.
7. State the law of conservation of energy. Show that the total mechanical energy of a particle falling freely under the gravity is conserved.
8. What is perfectly inelastic collision? Find an expression for loss in kinetic energy in an inelastic collision between two objects.
9. Discuss elastic collision between two objects in two dimensions.
10. Obtain the relation between kinetic energy and momentum.
11. If momentum of a body is increased by 50%, then what will be the percentage increase in Kinetic energy of a body?
12. A ball of mass 0.1kg makes an elastic head on collision with another ball at rest. If the 0.1kg ball rebounds at one-half of its original speed, find the mass of the other ball.

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