

INTERNATIONAL INDIAN SCHOOL BURAIDAH

CLASS: XI PHYSICS WORKSHEET

Unit-5

Work Power and Energy

1. A man weighing 50 kgf carries a load of 10 kgf to the top of the building in 5 minutes. The work done by him is 10^5 J. If he carries the same load in 10 minutes, the work done by him will be:

- (a) 10^5 J
- (b) 5×10^5 J
- (c) 12×10^5 J
- (d) 2.5×10^5 J

2. The slope of the kinetic energy versus position vector gives the time rate of change of:

- (a) momentum
- (b) force
- (c) work done
- (d) power

3. A bus weighing 100 quintals moves on a rough road with a constant speed of 72 kmh^{-1} . The friction of the road is 9% of its weight and that of air is 1 % of its weight. What is the power of the engine? Take $g = 10 \text{ ms}^{-2}$.

- (a) 100 kW
- (b) 150 kW
- (c) 200 kW
- (d) 50 kW

4. A bullet is fired into a block of sand and its velocity decreases by 50% when it penetrates through 9 cm. What will be the total distance penetrated by the bullet?

- (a) 9 cm
- (b) 10 cm
- (c) 12 cm
- (d) 18 cm

5. A ball is dropped from a height of 15 m. It gets embedded in sand by 10 mm and then stops. Which of the following is conserved?

- (a) Temperature
- (b) Momentum
- (c) Kinetic energy
- (d) Both (a) and (c)

6. A bullet is fired into a block of sand and its velocity decreases by 50% when it penetrates through 9 cm. What will be the total distance penetrated by the bullet?

- (a) 9 cm
- (b) 10 cm
- (c) 12 cm
- (d) 18 cm

7. A bullet is fired horizontally and gets embedded in a block kept on a table. If the table is frictionless, then

- (a) only momentum is conserved.
- (b) only potential energy is conserved.
- (c) only K.E. is conserved.
- (d) both (a) and (b).

8. The work performed on an object does not depend upon

- (a) the displacement.
- (b) the force applied.
- (c) the angle at which the force is applied to the displacement
- (d) initial velocity of the object.

9. A ball is dropped from a height of 15 m. It gets embedded in sand by 10 mm and then stops. Which of the following is conserved?

- (a) Temperature
- (b) Momentum
- (c) Kinetic energy
- (d) Both (a) and (c)

10. Which of the following statement is True/False?

- (a) The gain in the P.E. of an object of mass m raised from the surface of earth to a height equal to the radius R is mgR^2 .
- (b) $1 \text{ eV} = 1.6 \times 10^{-19} \text{ J}$
- (c) Power is the cross-product of force and velocity.
- (d) Work is the dot product of force and displacement.