Work energy power numerical test for class nine

1.If applied force on an object is 5N and speed id 6m/s then find power. 2

2. A bullet of mass 20 g is found to pass two points 30m apart in 4 seconds. Find its kinetic energy 2

3. A 5 kg ball is thrown vertically upwards with a speed of 10 m/s   3

a) find the potential energy when it reaches to the highest point

b) calculate the maximum height.

4.
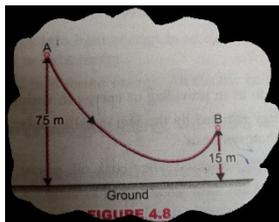
A skier of mass 60 kg stands at A at the top of the ski jump. He moves from A to B.

   a) Calculate the change in the gravitational potential energy of the skier between A and B

   b) If 75% of the energy in part becomes the kinetic energy at B, calculate the speed at which
      the skier arrives at B   3

5. a spring is compressed by a toy cart of mass 150gm. On releasing the cart, it moves with a speed
of 0.2 m/s. calculate the elastic potential energy. 2

6.
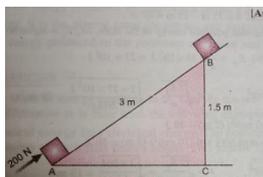
A block of mass 30 kg is pulled up by a rope as shown in the figure with a constant speed by applying
a force of 200N parallel to the slope. A and B are the initial and the final position of the block.
Calculate

   a) The work done by the force in moving the block from A to B.

   b) The potential energy gained by the block

   c) Account for the difference in work done by the force and the increase in potential energy of
      the block   3

7. A body of mass 5 kg falls from a height of 5m. how much energy does it possess at any instant? 1

8. A rocket of mass $3*10^6$ kg takes off from a launching pad and acquires a vertical velocity of 1km/s
and an altitude of 25 km. calculate its potential and kinetic energy. 3

9. A lift is designed to carry a load of 4000 kg through 10 floors of a building, averaging 6m per floor
in 10s. calculate the power of the lift   2

10. calculate the electricity bill of the month of July when you are using 2 fans of 200W each for 10 hours and three lights of 60 W each for 8 hours. One Unit costs 1 rs.   3