INDIAN SCHOOL NIZWA - WORKSHEET

PHYSICS

CH: 6 WORK AND ENERGY

Name: _____ Date:_____ Class: XI Sec: _A__

1. State the factors on which the work done depends.
2. Give two examples from daily life where according to Physics, work done is zero.
3. State the conditions under which a force does no work.
4. In a tug of war one team is slowly giving way to the other. What work is being done and by whom?
5. A man rowing boat upstream is at rest with respect to the shore. Is he doing work?
6. Does a single force acting on a particle necessarily change its KE and momentum?
7. When an air bubble rises in water, what happens to its potential energy?
8. What kind of energy is stored in the spring of a watch?
9. Can a body have momentum without energy?
10. What is a conservative force?
11. Two bodies of unequal masses have same linear momentum. Which one will has greater kinetic energy?
12. How does the kinetic energy of a body change if its momentum is doubled?
13. Two bodies of masses m_1 and m_2 have same linear momentum. What is the ratio of their kinetic energies?
14. A force F = i + 5j + 7k acts on a particle and displaces it through s = 6i + 9k. Calculate the work done if the force is in Newton and displacement in metre.
15. A body of mass 4kg initially at rest is subject to a force 16N. What is the kinetic energy acquires by the body at the end of 10s?
16. A particle moves along the x axis from x = 0 to x = 5m under the influence of a force given by $F = 7 - 2x + 3x^2$. Find the work done in the process.
17. If the linear momentum of a body increases by 50%, what will be the % increase in the kinetic energy of the body?
18. How high must a body be lifted to gain an amount of potential energy equal to the kinetic energy it has when moving at speed 20m/s?
19. A ball bounces to 80% of its original height. What fraction of its mechanical energy is lost in each bounce ? where does this energy go?
20. A body of mass 2 kg is resting on a rough horizontal surface. A force of 20N is now applied to it for 10s, parallel to the surface. If the coefficient of kinetic friction between the surfaces in contact is 0.2, calculate: (a) work done by the applied force in 10s. (b) Change in kinetic energy of the object in 10s.

21. An artificial satellite is at a height of 36,500Km above earth's surface. What is the work done by earth's gravitational force in keeping it in its orbit?
22. A body is moving along a circular path. How much work is done by the centripetal force?