PHYSICS

BOOKS - PSEB

WORK AND ENERGY

Exercise

1. Look at the activities listed below. Reason out whether or not work is done in the light of

your understanding of the term 'work'. Suma is swimming in a pond.

Watch Video Solution

2. Look at the activities listed below. Reason out whether or not work is done in the light of your understanding of the term 'work'. A donkey is carrying a load on its back

Watch Video Solution

3. Look at the activities listed blew. Reson out whether or not work is done in the light of your understanding of the term 'work'. A wind-mill is lifting water from a well.

Watch Video Solution

4. Look at the activities listed below. Reason out whether or not work is done in the light of your understanding of the term 'work'. A green plant is carrying out photosynthesis.

Watch Video Solution

5. Look at the activities listed below. Reason out whether or not work is done in the light of your understanding of the team 'work'. -An engine is pulling a train.

Watch Video Solution

6. Look at the activities listed below. Reason out whether or not work is done in the light of

your understanding of the term 'work'. Food grains are getting dried in the sun.

Watch Video Solution

7. Look at the activities listed below. Reason out whether or not work is done in the light of your understanding of the term 'work'. A sail boat is moving due to wind energy.

Watch Video Solution

8. An object throw at a certain angle to the ground moves in a curved path and falls back to the ground. The initial and final points of the path of object lie on the same horizontal line. What is the work done by the force of gravity on the object.

Watch Video Solution

9. A battery lights a bulb. Describe the energy changes involved in the process.

Watch Video Solution

10. Certain force acting on a 20 kg mass changes its velocity from $5ms^{-1}$ to $2ms^{-1}$. Calculate the work done by the force.

Watch Video Solution

11. A mass of 10 kg is at a point A on a table. It is moved to a point B. If line joining A and B is horizontal, what is the work done on the

object by gravitational force ? Explain your answer.

Watch Video Solution

12. The potential energy of a freely falling object decreases progressively. Does this violate the law of conservation of energy ? Why ?

Watch Video Solution

13. What are the various energy transformations that occur when you are riding a bicycle ?

Watch Video Solution

14. Does the transfer of energy takes place when you push a huge rock with all your might and fail to move it ? Where is the energy you spent going ?

Watch Video Solution

15. A certain household has consumed 250 units of electric energy during a month.How much energy is this in joules ?

Watch Video Solution

16. An object of mass 40 kg is raised to a height of 5 m above the ground. What is its potential energy ? If the object is allowed to fall, find its kinetic energy when it is half-way down. Take$g = 10ms^{-2}$.

Watch Video Solution

17. What is the work done by the force of gravity on a satellite moving round the earth ? Justify your answer.

Watch Video Solution

18. Can there be a displacement of any object in the absence of any external force?

Watch Video Solution

19. A person holds a bundle of hay over his head for 30 minutes and gets tired. Has he done some work or not,? Justify your answer.

Watch Video Solution

20. An electric heater is rated 1500W. How much energy does it use in 10 hours?

Watch Video Solution

21. Illustrate the law of conservation of energy by discussing the energy changes which occur when we draw a pendulum bob to one side nd llow it to oscillate. Why does the bob eventually come to rest? What happens to its energy eventually? Is it a voiltion of the law of conservation of energy?

Watch Video Solution

22. An object of mass, m is moving with a constant velocity,v. How much work should be

done on the object in order to bring the object to rest?

Watch Video Solution

23. Calculate the work required to be done to stop a car of 1500 kg moving at a velocity of $60kh^{-1}$.

Watch Video Solution

24. In each of the following a force,F is acting on an object of mass,m. The direction of displacement is from west to east shown by the longer arrow. Observe the diagrams carefully and state whether the work done by the force is negative,positive or zero.

Watch Video Solution

25. Soni says that the acceleration in an object could be zero even when several forces are acting on it. Do you agree with her?why?

Watch Video Solution

26. Find the energy in kW h consumed in 10 hours by four devices of power 500W each.

Watch Video Solution

27. A freely falling object eventually stops on reaching the ground. What happens to its kinetic energy?

 Watch Video Solution