ODM EDUCATIONAL GROUP
Changing your Tomorrow

ENERGY

CHAPTER NO.4

SUB: PHYSICS

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LEARNING OUTCOMES

Students will be able to:

- Define kinetic energy.
- Express kinetic energy in proper units.
- Solve simple problems based on kinetic energy.
- Define potential energy.
- Define gravitational potential energy.
- Solve problems based on gravitational potential energy.
- Describe energy transformation in daily life situation .
- Distinguish between energy and power.

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POINTS TO BE COVERED

- Energy
- Units of energy.
- Mechanical Energy.
- Potential energy.

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INTRODUCTION

https://youtu.be/lqV5L66EP2E

ENERGY

The capacity of a body to do work is called the energy of the body.

Unit of energy = Joules

1KJ = 1000 J

1 Joule: A body is said to possess an energy of 1 joule if it can do one joule work.

MECHANICAL ENERGY

- The energy possessed by a body due to its state of rest or state of motion is called mechanical energy.
- Mechanical energy is found in two forms.
- Potential energy
- Kinetic energy
- The total mechanical energy of a body is the sum of its potential energy and kinetic energy.

POTENTIAL ENERGY

- **POTENTIAL ENERGY:**
- The energy possessed by a body due to its position or shape is called its potential energy.
- For Example:
- Water stored in a dam has large amount of potential energy due to its height above the ground.
- A stretched rubber band possesses potential energy due to its distorted shape.
- **Types of Potential Energy**
- On the basis of position and change in shape of object, potential energy is of two types:
- **1. Gravitational Potential Energy:**
- It is the energy possessed by a body due to its position above the ground.
- **2. Elastic Potential Energy:**
- It is the energy possessed by a body due to its change in shape.
- **Expression for Potential Energy**
- The potential energy (E_p) is equal to the work done over an object of mass '*m*' to raise it by a height '*h*'.
- Thus, $E_p = mgh$, where g = acceleration due to gravity.
- https://youtu.be/RYG0_MPLMlw

FACTORS ON WHICH P.E DEPENDS

- F= mg
- S = h
- Potential energy = mgh
- So potential energy depends on the following factors:
- 1. The mass of the body
- 2. Its height above the ground.

HOME ASSIGNMENT

- Exercise: B: 1,2,3,4

THANKING YOU

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