

Chapter – 3

Energy

Evaluation

I. Choose the correct Answer:

Question 1.

When diesel is burnt chemical energy is converted into _____.

- a) wind energy
- b) heat energy
- c) solar energy
- d) sound energy

Answer:

- b) heat energy

Question 2.

Running water possesses _____.

- a) potential energy
- b) chemical energy
- c) kinetic energy
- d) sound energy

Answer:

- c) kinetic energy

Question 3.

Unit of energy is _____.

- a) Kilogram
- b) Newton
- c) Kelvin
- d) Joule

Answer:

- d) Joule

Question 4.

Which one of the following requires wind energy?

- a) Bicycle
- b) Photosynthesis
- c) Parachute
- d) Automobiles

Answer:

- c) Parachute

Question 5.

Cow dung possesses _____ .

- a) kinetic energy
- b) chemical energy
- c) solar energy
- d) heat energy

Answer:

- b) chemical energy

II. Find out the energy conversion that takes place in the following:

Question 1.

Iron box: _____.

Answer:

Chemical energy to Heat energy

Question 2.

Electric Iron box: _____.

Answer:

Electric energy to Heat energy

Question 3.

Electric fan:

Answer:

Electric energy to Mechanical energy

Question 4.

Speaker:

Answer:

Electric energy to Sound energy

Question 5.

Generator: _____.

Answer:

Mechanical energy to Electrical energy

III. Find out form of energy possessed by the following things:

Question 1.

A rock on the top of a hill.

Answer:

Potential Energy

Question 2.

A rolling ball.

Answer:

Kinetic Energy

Question 3.

Charcoal.

Answer:

Heat Energy

Question 4.

Water falls.

Answer:

Kinetic Energy

Question 5.

Battery.

Answer:
Chemical Energy

IV. Match the following:

- | | |
|------------------|----------------------|
| 1. Electric bell | a) Solar energy |
| 2. Water in dam | b) Light energy |
| 3. Solar heater | c) Electrical energy |
| 4. Wind mill | d) Potential energy |
| 5. Torch light | e) Sound energy |

Answer:

1. e
2. d
3. a
4. c
5. b

V. Say True or False:

Question 1.

An apple falling from a tree is an example for kinetic energy.

Answer:

True

Question 2.

Electrical energy is used to run electric trains.

Answer:

True

Question 3.

Heat energy cannot be produced by friction.

Answer:

False

Question 4.

Potential energy and heat energy are the two forms of mechanical energy.

Answer:

False

Question 5.

The unit of energy is joule.

Answer:

True

VI. Answer in brief:**Question 1.**

What is energy?

Answer:

Energy is defined as capacity to do work. S.I unit of work is Joule.

Question 2.

What are the different forms of energy?

Answer:

There are different forms of energy like mechanical energy, heat energy, light energy, wind energy, solar energy, electrical energy, and chemical energy.

Question 3.

What are the uses of mechanical energy?

Answer:

- In hydroelectric plants, kinetic energy of water is converted into electrical energy.
- Windmills convert kinetic energy of winds into electrical energy.
- Mechanical energy of the hammer is used to apply a force on a nail.
- Mechanical energy can bring a moving body to rest and make a body at rest to move.

Question 4.

State the Law of conservation of energy.

Answer:

Law of conservation of energy states that energy Can neither be created nor be destroyed. One form of energy is converted into another form of energy.

Question 5.

Give the uses of Light energy.

Answer:

- We are able to see objects with the help of light energy.
- Plants use light energy to synthesis their food.
- With the help of light energy, our skin is able to synthesis Vitamin D.
- Electricity can be produced with the help of light energy.

VII. Answer in detail:**Question 1.**

Explain the types of Mechanical energy.

Answer:

Energy possessed by an object due its position is called mechanical energy. Mechanical energy can be classified into two;

- Kinetic energy
- Potential energy

a) Kinetic energy: Energy possessed by a moving objects known as kinetic energy. It is also known as energy of motion.

Eg: Moving car, cricket ball bowled by a player, bullet coming out of a gun.

b) Potential energy: Energy possessed by an object which is at rest is known as potential energy. It is also known as stores energy of position.

Eg: Object lifted above, stone in the stretched rubber, water in the dam.

Question 2.

Explain Conservation of energy.

Answer:

Energy cannot be created cannot be destroyed also. It is changed from one form to another form or transferred from one object to another object.

Examples for conservation of energy in our daily life are :

1. Water dam :

- Water stored in water dams possesses potential energy.
- When water falls down, potential energy of water is converted, into kinetic energy.
- Kinetic energy of water rotates the turbines and electric energy is generated.

2. Electrical appliances:

- Electrical energy is used in many domestic appliances such as electric stove, iron box and fan.
- Electric energy flows into the coil in the devices.
- As current flows, it heats up the coil.
- With the help of this heat energy, we do many useful works.
- Thus, electrical energy is converted into heat energy.
- Electrical energy is converted to mechanical energy in fan, light energy in bulb and sound energy in computer.

3. Driving a car:

- We use fuel in the form of petrol or diesel or gas to run vehicles.
- When this fuel burns in the engine, chemical energy is converted into heat energy.
- Burning fuel produces hot gases which pushes the piston in the engine to move the vehicle.
- Thus heat energy is converted into mechanical energy.