WORKSHEET 1

CHAPTER 8 – ENERGY

A. Tick (✓) the correct option.

1. Kakrapar atomic power station at Kakrapar is located in which state?
   a. Bihar b. Goa c. Tripura d. Gujarat
2. Which of these is the major source of energy in India?
   a. Wind b. Nuclear c. Coal d. Hydrogen
3. Combustion of fossil fuels in insufficient supply of oxygen forms
   a. carbon monoxide. b. hydrogen. c. oxygen. d. nitrogen.
4. Which of these gas is responsible for greenhouse effect?
   a. Oxygen b. Carbon dioxide c. Nitrogen d. Carbon monoxide
5. Minimum wind speed required to run the turbine generator is
   a. 20 km/h. b. 30 km/h. c. 40 km/h. d. 10 km/h.

B. Fill in the blanks.

1. Energy can neither be _____ nor be _____
2. The fossil fuel is a _____ source of energy.
3. The mechanical energy is converted into _____ in the generator.
4. Biogas is obtained by _____ decomposition of cow-dung in the presence of water.
5. A cluster of wind turbine generators installed over a large area is called a _____

C. State whether the following statements are true or false.

1. Wind energy farms incur high cost of maintenance.
2. Hydroelectricity is totally pollution free.
3. LPG is used as a fuel in *chullahs*.
4. The energy of flowing water is non-renewable source of energy.
5. SPM is short form of suspended particulate matter.

D. Match the following.

1. Fossil fuels	renewable source of energy
2. Tidal energy	generator
3. Harmful gases to harmless gases	non-renewable source of energy
4. Greenhouse effect	catalytic converter
5. Mechanical energy to electrical	carbon dioxide

Name: ..... Teacher's signature: .....

Class: IX Date: .....

E. Answer the following questions.

Very short answer questions

1. What is global warming?
2. What are non-renewable sources of energy?

Short answer questions

1. What are advantages of solar cells/solar cell panels?
2. Write any three uses of biogas.

Long answer questions

1. What are the limitations of tidal energy?
2. What steps can be taken to reduce energy consumption and to conserve energy?

ANSWERS

WORKSHEET 1

A. Tick (✓) the correct option.

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

B. Fill in the blanks.

1. created, destroyed
2. non-renewable
3. electrical energy
4. anaerobic
5. wind energy farm

C. State whether the following statements are true or false.

1. T 2. T 3. F 4. F 5. T

D. Match the following.

1. Fossil fuels	non-renewable source of energy
2. Tidal energy	renewable source of energy
3. Harmful gases to harmless gases	catalytic converter
4. Greenhouse effect	carbon dioxide
5. Mechanical energy to electrical	generator

E. Answer the following questions.

Very short answer questions

1. Global warming is the increase in the average temperature of the Earth near its surface, air and oceans.
2. Those sources of energy which are exhaustible, i.e. which cannot be renewed or replaced in short intervals of time. For example, fossil fuels.

Short answer questions

1. Advantages of solar cells/solar cell panels
   i. Solar cells have no moving parts, are easy to construct, and require little maintenance.
   ii. Solar cell panels can be installed in remote and very less populated areas in which laying a power transmission line may be expensive and not commercially viable.
   iii. Solar cells and solar cell panels are renewable sources of energy because both derive their energy from solar radiation which is a renewable source of energy and also inexhaustible.
   iv. Solar cells and solar cell panels do not cause any environmental pollution.
   v. Use of solar cells enables us to save fossil fuels as solar cells require no fuel.
2. Uses of biogas
   i. Biogas is used as a fuel for cooking food.
   ii. Biogas is used for illumination purpose.
   iii. Biogas can be used for driving engines of water pumping sets used for irrigation.

Long answer questions

1. Limitations of tidal energy
   i. **Limited scope:** Tidal dams cannot be established everywhere. There are very few sites around the world which are suitable for building tidal dams to harness tidal energy.
   ii. **Small scale power generation:** The rise and fall of sea water during tides is not enough to generate electricity on a large scale.
   iii. **High maintenance cost:** The sluice gates and blades of the turbines are exposed to salty sea-water, so they need a high level of maintenance. So, the cost incurred in its maintenance is high.
   iv. **Valuable output:** There is variation in the tides during the daytime, so the power generation is also affected.
2. The following steps can be taken to reduce energy consumption and to conserve energy.
   i. In offices, schools, hospitals, industries and other establishments, fans, lights, coolers, etc. should be switched off when not in use.
   ii. We should use more efficient appliances. For example, a tube light gives much more light than a light bulb using the same amount of energy.
   iii. We should use fuel-efficient vehicles and their engines should be tuned properly and maintained timely.
   iv. We should close water taps after use and repair all leaking water pipes. We need energy to purify water in water treatment plants and pump it to our homes. Water saved is energy saved.
   v. We should use public transport which consumes less energy per head than individual vehicles.
   vi. Pressure cookers and more efficient stoves should be used for cooking to save fuel.
   vii. We should use solar cookers, solar heaters and dryers wherever possible.