

Science

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(Chapter 14)(Sources of Energy)
Class - 10

 Page 253-A

Question 1:

What kind of mirror – concave, convex or plain – would be best suited for use in a solar cooker? Why?

Answer 1:

A solar cooker uses heat of the sunlight to cook the food. A concave mirror is used in order to reflect and focus sunlight at a particular area. The mirror focuses all the incident sunlight at a point. The temperature at that point increases, thereby cooking and heating the food placed at that particular area.

Question 2:

What are the limitations of the energy that can be obtained from the oceans?

Answer 2:

Energy from the oceans can be obtained in the form of tidal energy, wave energy and ocean thermal energy. But these energy sources suffer from the following limitations:

- There are very few locations where dams to utilise tidal energy can be built.
- Cost of installation of power houses is extremely high and efficiency of plants is comparatively small.
- Power plants built in oceans or at sea-shores will need high continuous maintenance as chances of corrosion are extremely high.

Question 3:

What is geothermal energy?

Answer 3:

Geothermal energy is the heat energy present inside earth in certain regions called *hot spots*. Due to geological changes, molten rocks formed in the deeper hot regions of earth's crust are pushed upwards and are trapped in hot spots. When underground water comes in contact with the hot spot, steam is generated. This steam is routed through a pipe to a turbine and used to generate electricity.

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Question 4:

What are the advantages of nuclear energy?

Answer 4:

The advantages of nuclear energy are as follows:

- Large amount of energy is produced per unit mass.
- It does not produce smoke. It is a clean energy.
- Fission of one atom of uranium produces 10 million times the energy released by burning of one atom of carbon.
- Fusion of four hydrogen atoms produces huge amount of energy.