

Natural resources

Chapter-14 : Sources of energy

1. **Mention the Conventional sources of energy.**
Firewood, Flowing water, Fossil fuels (coal, petroleum, diesel, kerosene)
2. **Mention Non- Conventional sources of energy.**
Solar energy, wind energy, bio mass, geothermal energy, tidal energy, nuclear energy.
3. **Give example for renewable sources of energy**
Solar energy, wind energy, Firewood, flowing water
4. **List out the characteristics of good sources of energy**
1.High efficiency 2. Easily available 3. Easy to store and transport 4. Economical

5. **What is solar energy? List out solar devices and their functions.**
The energy received from Sun in the form of heat and light.

Solar devices

Solar cooker: Uses heat energy of sun to cook food.
Solar cell: Device used to convert light energy into electrical energy.
Solar water heater: Uses heat and light energy for getting hot water.

6. **Define Solar constant.**

The amount of energy reaching perpendicularly per square meter per second.

7. **How are fossil fuels formed? Mention the effects caused by using fossil fuels?**
Millions of years ago large number of animals and plants (Bio mass) got buried beneath the Earth. Under humid conditions, high pressure, temperature of the earth and bacterial decomposition in absence of air decomposed to form Fossil fuels. Ex: Coal and petroleum products. Effects-Pollution like Acid rain, greenhouse effect, Global warming.

8. **Write the function of glass top of solar cooker?**
The glass top prevents heat losses due to conduction, convection and radiation.

9. **What is geothermal energy?**
Due to high pressure and temperature in the Earth's crust, the underground water comes in contact with hotspots and changes into steam. Steam so formed can be used to turn turbines and generate electricity.

10. **What is wind energy? List out the merits and demerits**
The kinetic energy of the moving wind is used to rotate blades to produce electrical energy

Merits	Demerits
1. Doesn't cause pollution 2. It is renewable source of energy.	1. Setting up of wind energy farms is expensive. 2. Cannot be established in all places and requires more land.

11. **Name the major constituent of Bio-gas. List out the merits of Bio mass**
The major constituent of Bio-gas is Methane
Merits of bio mass: 1. Causes less pollution 2. Improves fertility of soil

12. **Differentiate between wave energy and tidal energy.**

Wave energy	Tidal energy
The kinetic energy of waves in sea is used to produce electricity.	The gravitational force of moon and earth causes tides. This rise and fall of tides can be used to produce electrical energy.

13. **Establishing Nuclear reactors causes pollution by radiation. How?**
During nuclear fission process harmful radiations are emitted out and even during the disposal of the spent fuel, causes environmental contamination which can effect health of millions of people.

14. **Use of CNG is highly effective. How?**
Compared to other fuel CNG is a cleaner source of energy. So it can be used to reduce pollution also.

15. **How do thermal power plants work? Why it is not eco-friendly?**
By burning coal, the heat produced is used to convert water into steam. This steam is used to turn turbines and hence generate electricity.
Burning of coal causes pollution it releases oxides of carbon, nitrogen and sulphur into atmosphere.

16. **Most of the environmentalist opposes for construction of dams. Why?**
By construction of dams most of the agricultural lands are submerged and the submerged vegetation rots and produces large amount of methane gas.

17. **The sources of energy must be conserved. Why?**
Most of the sources of are nonrenewable and are depleting at a very faster rate. In order to make it available to next generation it is to be conserved also to avoid pollution and save environment.

18. **Differentiate between nuclear fission and nuclear fusion reactions.**

Nuclear fission	Nuclear fusion
The process by which a heavy unstable nucleus is broken into medium weight nuclei by the bombardment of a slow neutron, So as to liberate more neutrons and tremendous amount of energy Ex: Fission of Uranium (U-235)	The process of combining two lighter nuclei to form an element Enormous amount of energy is liberated. Ex: Fusion of hydrogen

19. **Draw a neat diagram showing a unit used to produce a source of energy from organic waste.**

