

- Q1.** Why is there a need to harness non-conventional sources of energy? Give two main reasons.
- Q2.** Write two different ways of harnessing energy from ocean.
- Q3.** What steps would you suggest to minimise environmental pollution caused by burning of fossil fuels?
- Q4.** What is the role of a plane mirror and a glass sheet in a solar cooker?
- Q5.** Mention three advantages of a solar cell?
- Q6.** What is biomass? What can be done to obtain bio-energy using biomass?
- Q7.** What are the limitations in obtaining energy from wind?
- Q8.** Which is the process used to harness nuclear energy these days? Explain it briefly.
- Q9.** How can solar energy be harnessed? Mention any two limitations in using solar energy. How are these limitations overcome?
- Q10.** Make a list of conventional and non-conventional sources of energy. Give a brief description of harnessing one non-conventional source of energy.
- Q11.** Why is there a need for harnessing non-conventional sources of energy? How can energy be harnessed from the sea in different ways?
- Q12.** What are the environmental consequences of using fossil fuels? Suggest the steps to minimise the pollution caused by various sources of energy including non-conventional sources of energy.
- Q13.** Energy from various sources is considered to have been derived from the Sun. Do you agree? Justify your answer.
- Q14.** What is biomass/ Explain the principle and working of a biogas plant using a labelled schematic diagram.

- S1. Hint:** (a) Our demand for energy is increasing to improve quality of life and growth of population.  
(b) Fossil fuels are limited.
- S2. Hint:** Tidal, Wave, OTEC. etc.
- S3.** (a) Use of smokeless appliances. (b) Afforestation.
- S4. Hint:** Plane mirror acts as a reflector.  
Glass sheet results in green house effect.
- S5. Hint:** (a) Solar cells have no moving parts.  
(b) Requires little maintenance.  
(c) They can be set up in remote areas.
- S6. Hint: Biomass:** Plant and animal wastes. Explain the working of a biogas plant with a labelled diagram.
- S7.** Because of it being erratic, energy cannot be harnessed continuously. Large areas are required for wind farms.
- S8. Hint:** Nuclear Fission. Explanation must include all the steps starting from splitting of uranium nuclei to disposal of nuclear waste.
- S9. Hint:** Your answer must include: working of a solar device using reflectors/solar cell.  
Limitations: Available during day time/sunny days. Requires huge installations and costly. To overcome limitation: Use of solar cell.
- S10. Hint:** Conventional: Fossil fuels, water, wind, Biomass etc.  
Non-conventional: Nuclear, Solar, Energy from ocean, Geothermal etc. Explain the use of one of non-conventional source of energy.
- S11. Hint:** (a) Fossil fuels are depleting. Population is increasing, Quality of life is to be improved etc.  
(b) Tidal/wave/OTEC.
- S12. Hint:** Air pollution, Green house effect, Environment consequences: Acid rain, global warming etc.  
Steps: Use of smokeless appliances, Refined technology, Judicious use of energy etc.
- S13. Hint:** Sun is the ultimate source of energy. Justify by explaining the direct or indirect dependence of different sources of energy on Sun.
- S14. Hint:** Biomass: Plant and animal wastes. Give description of biogas plant with the help of a labelled diagram.