

Note: Answer all questions from Part-A. Answer any Five questions from Part-B.

Part – A (25 Marks)

1. List out the limitations of renewable energy sources.
2. Briefly explain some of the criteria chosen for assessing the potential of non-conventional energy sources.
3. Mention any two prominent distinguishing features between flat-plate and concentrating solar collectors.
4. Write any two advantages and limitations of solar cells.
5. Explain the basis for conversion of wind energy into electricity.
6. Mention atleast four contrasts between horizontal axis and vertical axis wind mild rotors.
7. Describe clearly the nature of geothermal sources of energy.
8. Briefly describe the method employed for producing "biogas" from kitchen waste and cattle dung.
9. Narrate two salient differences between "tidal energy" and "OTEC energy".
10. Comment on economic viability of "OTEC energy systems".

Part – B (5 x 10 = 50 Marks)

11. How are non-conventional energy sources classified?
12. With a relevant neat diagram, explain the working principle of a "Parabolic concentrator solar collector".
13. With the aid of neat sketches, bring out the contrasting features of
i) horizontal axis-single blade wind mill and ii) horizontal axis-two blade wind mill.
14. Explain :
i) Hot dry rock and
ii) Molten rock types of geothermal Energy systems and mention their relative advantages and disadvantages.
15. Mention various types of chulhas meant for rural energy applications and explain any one kind of biogas-operated chulha.
16. Explain :
i) Double-basin type and
ii) Double-basin with pumping type of tidal power plants and mention their relative merits and demerits.
17. Explain the principle of Multiple-product OTEC systems and discuss their status in the current world energy scenario.

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