

MEM43 Renewable Energy <sup>Sources & Energy</sup> Conservation

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REG. NO

OCTOBER 2021

Time: Three hours

Maximum Marks: 75

- Note:
1. Answer ALL the questions in PART-A (1 mark each)
  2. Answer any ONE question from each unit in PART-B (3 marks each)
  3. Answer any ONE question from each unit in PART-C (10 marks each)
  4. The question paper contains TWO Pages

**PART-A** (1x10=10)

1. Define Primary energy.
2. What do you mean by energy conservation?
3. Name two instruments used to measure the solar radiation.
4. What are the types of solar energy collectors?
5. What is meant by thin film PV?
6. Define solar array.
7. Write any two applications of wind energy.
8. Define Ocean thermal energy.
9. What is biomass gasification?
10. Define biodiesel.

**PART-B** (3x5=15)

UNIT-I

11. What are the needs of energy audit?
12. Classify the methods of energy conservation.

UNIT-II

13. List out the performance parameters of solar energy collectors.
14. Mention the applications of solar bond electric power plant.

UNIT-III

15. What are the electrical characteristics of silicon PV cell?
16. How the cost of energy from PV cell is calculated?

UNIT-IV

17. List the advantages of wind energy.
18. State the basic principle of tidal power.

UNIT-V

19. Write a note on usable forms of biomass.
20. Mention the types of biomass conversion technologies.

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PART-C (10x5=50)

UNIT-I

21. (i) Explain energy consumption and standard of living.  
(ii) Explain the importance of renewable energy sources.
22. Explain any two energy management techniques.

UNIT-II

23. Explain with sketch the concentrator with point focus.
24. Explain the solar industrial heating system.

UNIT-III

25. Explain the construction and working of solar photovoltaic cell. List the advantages and applications of PV systems.
26. Explain the designing stand alone solar PV power plant.

UNIT-IV

27. (i) Explain about wind data and energy estimation.  
(ii) Explain with sketch, the working of horizontal axis wind turbine.
28. Explain the components and operation of tidal power plant.

UNIT-V

29. Explain how energy conversion can be done from urban waste.
30. Explain the construction and working of floating drum type biogas plant with sketch.

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