D 50556 (Pages : 2) Name.....

Reg. No.....

SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, NOVEMBER 2013

ME 09 706 L25—ENERGY ENGINEERING AND MANAGEMENT

Time : Three Hours Maximum : 70 Marks

Part A

Answer **all** *questions.*

1. What is Ocean Thermal Energy Conversion (OTEC) ?
2. Mention any *two* requirements of a Tariff.
3. What is waste heat recovery system ?
4. What is planetary winds ?
5. What is the aim of energy resource management ?

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*

6. State any *five* advantages of unconventional energy sources.
7. Briefly explain energy policies.
8. Explain energy audit.
9. What are the factors to be considered while locating wind energy conversion systems ?
10. What is meant by fluidized bed combustion ?
11. Explain cost optimization in energy management.

(4 × 5 = 20 marks)

Part C

Answer **all** *questions.*

12. How is cost of power generation reduced ?

Or

13. Explain the various ways by which solar energy is converted to useful form and used for different needs.

14. State the merits and demerits of unconventional energy sources over conventional energy sources.

Or

15. Calculate the cost of electrical energy generated per kWh at 100 % load factor, 75 % load factor, 50 % load factor and 25 % load factor for steam power plant. The fixed cost is Rs. 438 per kW of installed capacity per year and the fuel and operatings costs are 5 paise per kWh generated. Plot the curve between cost of energy per kWh and load factor.

16. Explain various types of wind mills. How is the performance of a wind mill rotor expressed ?

Or

17. Briefly explain heat pump and refrigerators.

18. Describe energy management in detail.

Or

19. Explain Financial appraisal and profitability.

(4 × 10 = 40 marks)