



- Notes :
1. All questions carry equal marks.
 2. Answer **any five** questions.
 3. Due credit will be given to neatness and adequate dimensions.
 4. Assume suitable data wherever necessary.
 5. Diagrams should be given wherever necessary.
 6. Illustrate your answers wherever necessary with the help of neat sketches.
 7. Use of non programmable calculator is permitted.

1. a) Explain in brief with neat block diagram about Renewable Hybrid Energy System. 7
- b) What happens if energy prices go down, explain with suitable example? 7
2. State and explain New and emerging technologies for meeting the future energy needs of the country. Also mention technologies and methods of conversion to useful energy. 14
3. Write short notes on the following. 14
 - i) Need for environmental cost – benefit analysis applied to energy.
 - ii) Need for Calibration of Environmental Policy Instruments.
4. Draw SANKEY diagram for a reheating Furnace? The inputs and outputs should be marked clearly in terms of percentages. 14
5. a) Discuss briefly any five energy efficiency improvement opportunities in pumping systems. 7
- b) Discuss briefly some of the levels at which the material & energy balance are required to be developed in any industry. 7
6. a) Explain Prototype Carbon Fund? What are its uses? 7
- b) What do you know about the UNFCCC? What are its objectives? 7
7. What are the features & benefits of energy audit and MIS analysis for ELECTRICAL POWER TRANSMISSION SYSTEM. 14
8. a) Discuss briefly the subjects/ Heads which constitute a standard Energy Balance. Sheet. 7
- b) What do you mean by Fair Market Value Vs. Bottom-up Analysis for RE system pricing? 7
