



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

1. a) Write down the salient features of energy conservation Act – 2001. 7  
b) A solution of common salt in water is prepared by adding 20 kg of salt to 100 kg of water to make a liquid density  $1323 \text{ kg/m}^3$ . Calculate the concentration of salt in this solution as a – 7
  - i) Weight fraction
  - ii) Weight / volume fraction
  - iii) Mole fraction
  - iv) Molar concentration
2. a) What is energy audit? Explain different types of energy audit. 7  
b) Explain in details benchmarking & energy performance. 7
3. a) Explain techniques for energy consumption & production. 7  
b) How to select energy efficient motors (EEM) 7
4. a) What are the benefits of waste heat recovery. 7  
b) What are the calculations required for economic insulation thickness. 7
5. a) Explain the procedure for calculating the installed load efficacy & installed load efficacy Ratio (ILER) of general lighting installation in an interior. 7  
b) What is the purpose of material & energy balance. 7
6. a) What are the different losses in transmission & distribution sector? 7  
b) Explain “CUSUM” chart is drawn with example. 7
7. a) Explain the concept of “power demand monitoring” & how you apply it in a domestic sector. 7  
b) Write a “Detailed Note” on “European Agreement” on low voltage electric motor. 7
8. a) Explain key features of IS 12615 & IEEMA standards. 7  
b) Differentiate between Non-Conventional energy sources & Renewable energy sources. 7

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