

3 Hours

80 Marks

**Instructions**

1. Question number 1 is compulsory
2. Attempt any **THREE Questions** out of remaining **FIVE Questions**.
3. Use illustrative diagrams wherever required.

- Q1)** Attempt any Four.
- a) Discuss the present energy scenario in the world. **05**
  - b) Give examples of energy conservation and energy efficiency. **05**
  - c) Differentiate between high-grade energy and low-grade energy. **05**
  - d) Enlist any five energy audit instruments. **05**
  - e) Define Net Present Value (NPV). Write the formula to find NPV. **05**
  - f) What do you mean by the term LEED rating of building? **05**
- Q2)** a) What do you mean by energy management? Explain the types of energy audit. **10**
- b) Define energy audit. What are the duties and responsibilities of energy auditor? **10**
- Q3)** a) Explain Energy Conservation Act- 2001 and its Features. **10**
- b) Explain the Elements of monitoring & targeting. **10**
- Q4)** a) Define power factor. What are the benefits of power factor improvement? **10**
- b) List any TEN Energy conservation measures in lighting system. **10**
- Q5)** a) Explain any FIVE energy conservation measures in pumping system. **10**
- b) Discuss general fuel economy measures in Boilers and furnaces. **10**
- Q6)** a) Enlist five energy saving measures in a commercial building. **05**
- b) List the steps to evaluate performance of HVAC system. **05**
- c) List the steps to evaluate performance of lighting system. **05**
- d) Explain ECBC code of buildings. **05**
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