

Roll No. ....

Total Pages : 3

**520202**

**May 2024**

**M.Tech. (EEE) 2nd Semester**

**Energy and Environmental Auditing and Impact  
Assessment (MTEVE-202A)**

Time : 3 Hours]

[Max. Marks : 75

*Instructions :*

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*

**PART-A**

1. (a) What are the main differences between primary and secondary energy sources? (1.5)
- (b) Explain the concept of energy pricing in India and its significance in the energy sector reforms. (1.5)
- (c) Define a Sankey diagram and its uses. (1.5)
- (d) What are the key elements of an energy action plan, and why is it important for optimizing energy usage within a facility or system? (1.5)
- (e) What are the two main types of environmental audits? (1.5)
- (f) What are the key legal requirements for environmental auditing? (1.5)

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- (g) What are the key principles of Environmental Impact Assessment (EIA)? (1.5)
- (h) Explain the significance of Strategic Environmental Assessment (SEA) in the context of environmental planning and decision-making. (1.5)
- (i) What are the main components of the Environmental Impact Assessment (EIA) process. (1.5)
- (j) Outline the key steps involved in conducting a public hearing for an EIA study. (1.5)

**PART-B**

- 2. (a) Evaluate energy audit types, methodologies, and government programs' impact on energy efficiency. (10)
- (b) Examine EIA's principles, types, and limitations, focusing on Indian guidelines. (5)
- 3. (a) Evaluate the challenges related to energy pricing, sector reforms, and energy security. (5)
- (b) Describe the standards and guidelines followed in Environmental Impact Assessment (EIA). (10)
- 4. Define environmental auditing, its types, methodologies, and legal requirements. (15)
- 5. (a) Discuss the role of ESCOs and government programs like BEE, EESI, and PAT Scheme in energy management. (5)

- (b) Explain the fundamental principles of energy management, including material balances, energy balances, and the use of process flow charts. (10)
- 6. (a) Explain the concept of quality control in EIA practice. How do trends in EIA practice influence evaluation criteria and the use of expert systems and regulations. (10)
- (b) Evaluate restoration and rehabilitation technologies, significance in planning for sustainable development. (5)
- 7. Explain the basics of energy forms (electrical, thermal), their principles, and unit conversions, emphasizing their importance in future energy strategies. (15)