

Reg No : .....

Name : .....



**MAR ATHANASIUS COLLEGE OF ENGINEERING, KOTHAMANGALAM**

(Govt. Aided Autonomous Institution)

Third Semester B.Tech. Degree (SAY) Examination, February, 2026

Course Code: B24MC2T05

Course Name: ENERGY CONSERVATION AND ENVIRONMENTAL SUSTAINABILITY

Max. Marks: 50

Duration:2 Hours

**PART - A: 12 Marks (4 Qns x 3 Marks)**

**Answer all questions**

1. List out three significant objectives of National Energy Policy of India.
2. Explain the role of energy storage in the successful integration of smart grids.
3. List any three environment regulations in India. State the importance of environment regulations.
4. Define a sustainable smart city.

**PART - B: 38 Marks (2 Qns x 9 Marks + 2 Qns x 10 Marks)**

**Answer any One full question from each module.**

**Module I (9 Marks)**

5. Describe the key performance indicators commonly used in energy auditing.

OR

6. Explain the environmental, economic, and social impacts of relying on renewable energy sources.

**Module II (9 Marks)**

7. Illustrate the process of electricity generation in a rooftop solar system and discuss on the terms solar cell, solar array, and solar panel.

OR

8. Explain the principle of conversion of geothermal energy into electrical energy with a suitable diagram.

**Module III (10 Marks)**

9. Explain in detail the relation between climate change and carbon footprint.

OR

10. Describe the sources of air pollution and water pollution in detail.

**Module IV (10 Marks)**

11. Distinguish between carbon market and carbon pricing. Summarize how they help in achieving Intergenerational equity and resource efficiency.

OR

12. List the various global initiatives launched for sustainable development. Describe in detail about any one global sustainable development initiative.

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