

Term End External Examination 1st Semester (Session-Feb 2025)

Subject: Multidisciplinary Course

Course No and Title: PHY022I/ Renewable Energy Source

Time: 1.15 hours Max Marks:50 Min. Marks:20

Section A: Objective Type Questions

Q1. Choose the appropriate Answer: (4x1.5=06)

i. Which of the following is a limitation of solar energy?

- A** High pollution levels **B** Intermittency
C High maintenance costs **D** Depletion of resources

ii. A flat plate collector is used in:

- A** Wind turbines **B** Solar water heaters
C Geothermal plants **D** Tidal barrages

iii. The efficiency of a photovoltaic (PV) cell is primarily limited by:

- A** The availability of sunlight **B** The size of the PV module.
C The band gap of the semiconductor material. **D** The operating temperature of the cell.

iv. The main function of a generator in a wind turbine is to convert:

- A** Electrical energy to mechanical energy **B** Mechanical energy to electrical energy
C Thermal energy to electrical energy **D** Solar energy to electrical energy

Section-B: Descriptive Type Questions (Short Type)

Q2: Answer all the Questions (4 x 4 =16)

- i.** Define primary energy sources.
ii. Name three applications of solar energy.

iii. Describe the principles behind ocean-thermal energy conversion.

iv. Explain how small hydroelectricity systems function.

Section – C: Descriptive Type Questions (Medium Type)

Answer all the questions: (2 x 7=14)

Q3. What do you mean by renewable and non-renewable energy sources? Describe the concept of sustainability regarding energy resources.

OR

Compare and contrast conventional and non-conventional energy sources with examples.

Q4. Write a note on

- a) Solar Cooker
b) Solar Greenhouse
c) Solar Water heater

OR

Elaborate the importance and techniques of biomass and biochemical conversion.

Section – D: Descriptive Type Questions (Long Type)

Answer any one of the following: (1 x 14=15)

Q5. Explain the importance of Green Energy and the need for related technology. Explain briefly some of the eco-friendly Green Technologies.

Q6. Explain the principle behind harnessing wind energy. Explain the construction and working of wind turbine.