D5BPH2305 **Reg. No.....**

Name: .....

FIFTH SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2025

(Regular/Improvement/Supplementary)

PHYSICS

GPHY5D01T: NON CONVENTIONAL ENERGY SOURCES

(OPEN COURSE)

Time: 2 Hours **Maximum Marks: 60**

SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 marks)

1. Give the main components of a biogas plant.
2. Mention various parts of earth's interior.
3. Give any four applications of geothermal energy.
4. Distinguish between beam radiation and diffuse radiation.
5. Explain the working principle of a pyranometer.
6. What is a solar green house? Which are the major greenhouse gases?
7. Draw the schematic diagram of a flat plate type solar collector indicating the basic parts.
8. Discuss how local and planetary winds are formed.
9. What are primary and secondary energy sources? Give examples.
10. List any four problems in operating large wind power generators.
11. What is biomass? What are the biomass resources?
12. Explain Seebeck effect.

SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 30 marks)

13. Discuss the basic components of a solar power plant. What will be the efficiency of these?
14. What is photovoltaic effect? Explain the working of a silicon photo voltaic cell.
15. With the help of a block diagram, discuss the basic components of a wind energy conversion system.
16. Discuss the advantages of renewable energy sources.
17. Give any four advantages and disadvantages of wind energy conversion system.
18. Explain any two biomass conversion processes.
19. List the advantages of hydrogen as a fuel. What are the difficulties faced in using Hydrogen?

SECTION C: Answer any *one* question. The question carries *ten* marks.

20. Explain in detail the different categories of Geothermal energy resources.
21. Explain the working principle of OTEC? Discuss the closed cycle and thermoelectric OTEC system.

(1 × 10 = 10 Marks)