

FIFTH SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2024

(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. What are the limitations of renewable energy sources?
2. Define solar constant and give its value.
3. Comment on the working of a sunshine recorder.
4. What are the sources of wind?
5. What is the principle of wind energy conversion?
6. Write a short note on 'magma' resources.
7. List any four disadvantages of geothermal energy.
8. Explain with a neat diagram, the following parts of earth's interior:
(a) crust. (b) mantle. (c) core.
9. What are the raw materials used in a biogas plant?
10. Briefly explain the components of a tidal power plant.
11. Explain Peltier effect.
12. Give the classification of nuclear fission reactors based on energy of neutrons.

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

13. What are conventional and non-conventional energy sources? Describe fossil fuel as a conventional energy source.
14. Describe the working of a solar cooker.
15. Give any four advantages and disadvantages of wind energy.
16. Explain with a neat sketch, the construction and working of wind electric generating power plant.
17. Illustrate with the help of a diagram, the 'flash steam open system' used for power generation.
18. Discuss the major ocean energy sources.
19. List the main components of a fuel cell. Using a schematic diagram, describe the working of a fuel cell.

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

20. Using suitable figures, discuss the working principle of a low and medium temperature solar power plant.
21. Describe the processes involved in biomass conversion to energy.

(1 × 10 = 10 Marks)