D5BPH2105 **Reg.No.....**

Name: .....

FIFTH SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2023

(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. Name two greenhouse gases responsible for global warming.
2. What is a concentrating collector?
3. What is biomass and why it is called renewable energy?
4. What are the advantages and disadvantages of PV solar energy conversion?
5. What is a nuclear reactor?
6. Write any four disadvantages of wind energy.
7. What are the causes of wind?
8. What is the difference between 'Combustion' and 'Incineration'?
9. Discuss the applications of biogas.
10. Explain the principle of conversion of solar energy into heat.
11. What do you mean by a solar greenhouse? State the advantages of a green-house.
12. What is a moderator? Name common moderators.

SECTION B: Answer the following questions. Each carries *five* marks.

(Ceiling 30 Marks)

13. Discuss briefly the following non-conventional energy sources:
    (i) Solar energy
    (ii) Wind energy.
14. Explain briefly an ‘Indirect crop dryer'.
15. What do you mean by photovoltaic effect? List three advantages of a photovoltaic power conversion system.
16. What is biochemical conversion? What is ‘Anaerobic digestion'? Explain briefly.
17. Describe with a neat sketch the 'Hot Spring structure'.
18. Explain with a neat diagram the following parts of the earth's interior: (i) Crust; (ii) Mantle; (iii) Core.
19. Discuss the main issues associated with the use of hydrogen as an energy source.

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

20. What are the types of OTEC systems? Explain any one of them briefly.
21. Explain the principle of wind energy conversion. Discuss the basic components of a wind energy conversion system with the aid of diagram. Mention the advantages of wind energy conversion systems.

(1 x 10 = 10 Marks)