22U516 (Pages: 2) Name: .....

Reg.No: .....

FIFTH SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2024

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U PHY5 D01 / CC20U PHY5 D01 - NON-CONVENTIONAL ENERGY SOURCES

(Physics - Open Course)

(2019 Admission onwards)

Time : 2.00 Hours Maximum : 60 Marks

Credit : 3

Part A (Short answer questions)

Answer ***all*** questions. Each question carries 2 marks.

1. Explain briefly the impact of conventional sources of energy on environment.
2. Discuss the merits and demerits of the various renewable technologies developed in India.
3. What is concentrating collector?
4. What are the limitations of uses of solar water heating system?
5. Which is the indirect source behind wind generation?
6. Give the advantages and disadvantages of WECS.
7. What is geothermal system? Explain briefly.
8. What is biomass?
9. Explain briefly the components of a biogas plant.
10. How can the ocean energy sources categorised? Explain briefly.
11. What is the main feature of the tidal cycle?
12. Write down the problems associated with the storage of hydrogen cell in motor vehicles.

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)

Answer ***all*** questions. Each question carries 5 marks.

13. What are the essential parts of a photovoltaic system? What are the basic processes involved in a solar cell?
14. State the advantages and disadvantages of wind energy.
15. Compare the horizontal and vertical axis wind energy collectors.
16. Discuss the application of geothermal energy.
17. Explain briefly the densification process of biomass conversion.

18. Discuss the orgin of the source of energy in waves. Outline a method for converting wave energy to mechanical energy.

19. What are the types of OTEC systems? Explain any one of them briefly.

(Ceiling: 30 Marks)

Part C (Essay questions)

Answer any ***one*** question. The question carries 10 marks.

20. (a) Explain the different aspects of solar radiation reaching the surface of the earth.
    (b) What are the basic instruments used for the measurement of solar radiation.

21. Draw a schematic diagram of a liquid-dominated 'total flow concept system' and explain it briefly.

(1 × 10 = 10 Marks)

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