24U316 (Pages: 2) Name : .....

Reg. No : .....

THIRD SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2025

(FYUGP)

CC24UPHY3FV108 - RENEWABLE ENERGY SOURCES

(B.Sc. Physics & Computer Science Double Major - VAC)

(2024 Admission - Regular)

Time: 1.5 Hours Maximum : 50 Marks

Credit: 3

Part A (Short answer questions)

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

1. Describe how geothermal energy is obtained and used. [Level:2] [CO1]
2. List any two components of a pyranometer. [Level:2] [CO1]
3. What is a parabolic trough collector? [Level:2] [CO1]
4. Why is wind speed higher at greater heights? [Level:2] [CO2]
5. List the basic components of a wind energy conversion systems. [Level:2] [CO2]
6. What are geothermal fields? [Level:2] [CO3]
7. What are the methods used to fracture hot dry rocks to create artificial reservoirs? [Level:2] [CO3]
8. List any two disadvantages of geothermal energy. [Level:2] [CO3]
9. Mention the factors affecting wave energy. [Level:2] [CO4]
10. List the five major oceans of the world. [Level:1] [CO4]

(Ceiling: 16 Marks)

Part B (Paragraph questions/Problem)

Answer ***all*** questions. Each question carries 6 marks.

11. Write a note on silicon solar cells. [Level:2] [CO1]
12. Explain the major problems faced in the operation of large wind power generators. [Level:2] [CO2]
13. Explain in detail the environmental impacts caused by wind energy systems. [Level:2] [CO2]
14. Describe the Total Flow Concept in geothermal systems. What are the requirements of the mixed-phase expander? [Level:2] [CO3]

15. Explain why tidal power plants are economically less attractive at present. [Level:2] [CO4]

(Ceiling: 24 Marks)

Part C (Essay questions)

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

16. Discuss the working, advantages and disadvantages of concentrating collectors. [Level:2] [CO1]

17. What is Ocean Thermal Energy Conversion (OTEC)? Explain the working of the closed cycle OTEC system. Discuss its advantages and limitations. [Level:2] [CO4]

(1 × 10 = 10 Marks)

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