

20U512

(Pages: 2)

Name:

Reg.No:

FIFTH SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2022

(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. Discuss the primary and secondary energy sources. Also describe the future of non-conventional energy sources in India.
2. Give brief review of various sources of renewable energy.
3. Define the following terms as applied to solar energy: a) Solar radian, b) Extraterrestrial radiation, c) Beam radiation, d) Diffuse radiation
4. What are the characteristic features of a collector system?
5. Give any two methods for storing energy from wind energy converter systems.
6. Comment on the lift and drag forces.
7. What are the environmental problems associated with geothermal energy?
8. Discuss briefly about 'Availability of biomass'.
9. What are the advantages of using biogas in engines?
10. Define Ocean thermal energy.
11. Explain the following: i) Seebeck effect; ii) Peltier effect; iii) Thomson effect
12. Give the application of nuclear power plants.

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)

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

13. Discuss the working principle behind solar green house. What are the different types of solar green house? List the advantages.

14. Discuss the origin of the source of energy in waves. Outline a method for converting wave energy to mechanical energy.
15. List the application of wind plants.
16. Explain with a neat diagram the following parts of the earth's interior: a) Crust, b) Mantle, c) Core
17. Explain with the help of a schematic diagram the 'Flash steam open system' used for power generation.
18. Write a note on "Tidal power generation".
19. Explain the Wave-energy conversion by floats with a neat diagram.

(Ceiling: 30 Marks)

Part C (Essay questions)

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

20. What is a solar dryer? State the advantages and disadvantages of solar drying.
21. Explain any the techniques used to derive useful energy from biomass.

(1 × 10 = 10 Marks)
