

19U511

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Name:

Reg.No:

FIFTH SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS - UG)

CC19U PHY5 D01 - NON-CONVENTIONAL ENERGY SOURCES

(Physics - Open Course)

(2019 Admission - Regular)

Time : 2.00 Hours

Maximum : 60 Marks

Credit : 3

Part A (Short answer questions)

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

1. What are conventional and non-conventional energy sources? Describe the fossil fuel as a conventional energy source.
2. What is a chemical fuel? How does it differ from a nuclear fuel?
3. Define the term solar constant. What is its value?
4. What is solar photovoltaic effect?
5. Explain briefly wind and wind energy.
6. List the application of wind plants.
7. Discuss briefly 'Earthquakes' and 'Volcanoes'.
8. Discuss briefly about 'Availability of biomass'.
9. List the various sources of production of biogas.
10. Define Ocean tidal energy.
11. What do you understand by tidal energy?
12. How are nuclear reactors classified?

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)

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

13. What is the basic working principle behind a solar cooker? Describe with a neat sketch the construction and working of a box-type solar cooker.
14. Which is the indirect source behind wind generation?
15. What is meant by a wind turbine generator? Discuss the horizontal axis and vertical types of wind turbine generators.
16. What are the advantages and disadvantages of using geothermal energy?
17. Describe within a diagram the 'Dry-steam open system'. State its environmental impacts
18. Discuss the efficiency of OTEC and its working principle
19. Write a note on "Thermoelectric OTEC"

(Ceiling: 30 Marks)

Part C (Essay questions)

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

20. What are flat plate collectors? Explain briefly the factors which affect the performance of a flat plate collector
21. Explain any the techniques used to derive useful energy from biomass

(1 × 10 = 10 Marks)
