

Reg. No. :

Name :

Fifth Semester B.Sc. Degree Examination, December 2021.

First Degree Programme under CBCSS

Physics

Open Course

PY 1551.5 – ENERGY PHYSICS

(2018 & 2019 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions in one or two sentences. Each question carries **1** mark.

1. What are the conventional energy sources?
2. What is the purpose of a pyranometer?
3. Which are the most common refrigeration techniques?
4. What are the mechanisms for local winds?
5. Which are the two families of wind turbines?
6. Why biomass be considered as a renewable energy source?
7. What is ASTRA?
8. Which are the main types of fuel cells?

9. What is the advantage of ocean energy over solar energy?
10. What do you mean by energy crisis?

(10 × 1 = 10 Marks)

SECTION – B

Answer **any eight** questions, not exceeding a paragraph. Each question carries **2** marks.

11. Describe the two types of gaseous fuels.
12. What are the major drawbacks to the extensive application of solar energy?
13. Explain greenhouse effect.
14. Which are the basic parts of a solar water heater?
15. What are the various energy storage methods of wind energy?
16. Write down any four pumping applications of wind energy.
17. What are the purposes of controller in WECS?
18. Why does alcohol contained petrol or diesel be preferred to ordinary one?
19. Describe about the conditions necessary for photosynthesis.
20. What are the constituents of biogas?
21. Which are the ocean sources of energy?
22. What are the advantages of hydrogen fuel cells?
23. Why do we need non-conventional energy resources?
24. How does energy conservation and energy efficiency are related?

25. What are the possible solutions for energy crisis?
26. How renewable energy is vital for developing countries?

(8 × 2 = 16 Marks)

SECTION – C

Answer **any six** questions. Each question carries **4** marks.

27. Explain the classification of energy sources.
28. Explain solar refrigeration.
29. List the advantages of photovoltaic solar energy conversion.
30. Explain the working principle of solar furnace.
31. What are the advantages and disadvantages of wind energy conversion systems?
32. Compare vertical and horizontal axis type wind energy collectors.
33. Compare between wet and dry fermentation.
34. Draw the chart of the production of ethanol from wood.
35. What are the limitations of tidal power generation?
36. What are the merits and demerits of wave energy?
37. Discuss the effects of energy crisis.
38. Discuss the pattern of energy consumption in agricultural and transportation sectors.

(6 × 4 = 24 Marks)

SECTION – D

Answer **any two** questions. Each question carries **15** marks.

39. Discuss about renewable energy sources.
40. Describe the classification of solar energy storage systems.
41. Explain the basic principles of wind energy conversion.
42. Discuss on the biomass conversion technologies.
43. Discuss the ocean thermal electric conversion in detail.
44. What is global warming? What are its causes and side effects? How can be it reduced?

(2 × 15 = 30 Marks)