

B. Sc. DEGREE END SEMESTER EXAMINATION : NOVEMBER 2023**SEMESTER 5 : PHYSICS****COURSE : 19U5CRPHY08 : ENERGY AND ENVIRONMENTAL PHYSICS AND HUMAN RIGHTS VISION***(For Regular 2021 Admission and Supplementary 2020/2019 Admissions)*

Time : Three Hours

Max. Marks: 75

PART A**Answer any 10 (2 marks each)**

1. How are 'heat islands' created in cities?
2. Analyze the methods for Energy Conservation.
3. What are the different types of space heating?
4. What is the working principle of a nuclear fusion reactor?
5. Comment on the hot-spots of biodiversity.
6. Explain when and why the air act was passed?
7. Outline the main components of an optical concentrator?
8. How can you reduce your consumption of fossil fuels?
9. State the important values of biodiversity.
10. Differentiate between endangered and endemic species.
11. Illustrate the role of producers, consumers and decomposers in an ecosystem.
12. Recall any four different forms of energy.

(2 x 10 = 20)**PART B****Answer any 7 (5 marks each)**

13. Explain water conservation in agriculture and in urban settings.
14. Write the functions of the state pollution control boards in controlling air pollution?
15. Illustrate and explain ecological succession.
16. Illustrate solar furnaces.
17. How can you stop acid rain?
18. Compare the functions of the central and state pollution control boards.
19. Recall the storage techniques used to store intermittently generated energy.
20. Write a note on nuclear holocaust.
21. Give a brief account of various energy resources.
22. Illustrate a convective solar pond with the help of a diagram.

(5 x 7 = 35)**PART C****Answer any 2 (10 marks each)**

23. Describe and explain various renewable and non-renewable resources.
24. Evaluate the need for resource consumption patterns and the need for their equitable utilisation.
25. Discuss various aspects of (a) wind energy (b) hydro energy and (c) wave energy (d) tidal energy.
26. Discuss solar photo voltaic energy conversion with equivalent circuit. Also explain fill factor and efficiency.

(10 x 2 = 20)