

**B.A./B.Sc./B.COM. DEGREE END SEMESTER EXAMINATION - OCTOBER 2019****SEMESTER – 5: PHYSICS (OPEN COURSE)****COURSE: 15U50CPHY1: ENERGY AND ENVIRONMENTAL STUDIES**

*(Common for Regular 2017 Admission & Improvement 2016/Supplementary 2016/2015 Admissions)*

Time: Three Hours

Max. Marks: 75

**PART A** (Very short answer questions)***Answer all questions, each question carries 1 Mark***

1. What is the main advantage of natural gas when compared to other fossil fuels?
2. Write any two demerits of non-renewable sources of energy.
3. What is the source of geothermal energy?
4. Can solar energy be used for cooling buildings? Explain your answer.
5. Give two advantages of a solar cooker.
6. What are primary pollutants? Give an example.
7. How is smog produced?
8. What is meant by environmental impact assessment?
9. Give two biological waste treatment and disposal methods.
10. Define reclamation. (1 x 10 = 10)

**PART B** (Short answer)***Answer any Eight questions, each question carries 2 Marks***

11. Give two methods of conversion of biomass into useful energy.
12. What is the working principle of a nuclear fusion reactor?
13. What is the energy conversion occurring in a solar cell?
14. What are the main components of an optical concentrator?
15. What is acid rain?
16. What do you mean by noise pollution?
17. Write the names of any four heavy metal pollutants.
18. What is the purpose of environmental protection act?
19. Discuss term waste management?
20. Explain resource conservation? (2 x 8 = 16)

**PART C** (Problem/Derivations)***Answer any Five question, each question carries 5 Marks***

21. Explain a method of producing hydrogen. How is hydrogen stored? Give two uses of hydrogen energy.
22. Explain the working of a solar distillation system using a suitable schematic.
23. Discuss the working principle and advantages of a solar green house.

24. Describe the global effects of air pollution.
25. Give the purpose of any four types of environmental protection acts.
26. Briefly explain the source reduction techniques in waste management.
27. Discuss any four types of biomedical wastes. (5 x 5 = 25)

**PART D (Long answer questions)**

***Answer any Two question, each question carries 12 Marks***

28. Discuss the working principle of the production of (a) wind energy (b) hydro energy and (c) wave energy.
29. What are the essential parts of a flat plate collector? Discuss the working principle of a solar water heater.
30. (a) Discuss the causes of water pollution. (b) List few effects of water pollution.
31. Explain the various disposal methods of municipal solid wastes.

(12 x 2 = 24)

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