



NP – 125

I Semester B.Sc. Examination, May 2022
(NEP 2021 – 2022 and Onwards Scheme)
ELECTRONICS (OE)

OE 1.2 – Renewable Energy and Energy Harvesting

Time : 2½ Hours

Max. Marks : 60

Instruction : Answer any four questions from each Part.

PART – A

Answer any four questions :

(2×4=8)

1. Write a note on tidal energy.
2. What is biomass ?
3. What is Greenhouse effect ?
4. Differentiate renewable and non-renewable energy resources.
5. What is geothermal energy ?
6. State any two advantages of solar energy.

PART – B

Answer any four questions :

(5×4=20)

7. Compare and contrast biomass and hydro electricity as source of energy.
8. Discuss with suitable diagram the working of photo voltaic cell.
9. Describe construction and working of different types of wind turbines.
10. What are the limitations of extracting energy from the wind and the waves ?

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11. Determine the power in the wind if the wind speed is 20 m/s and blade length is 50 m.
12. Determine the thermal energy of a substance whose mass is 6 kg and specific heat is 0.030 J/kg°C. The temperature difference of this system is given at 20°C.

PART – C

Answer **any four** questions :

(8×4=32)

13. a) What is hydro energy ? 2
- b) Discuss the impact of hydro power sources on the environment in detail. 6
14. a) Write applications of piezoelectric energy Harvesting. 3
- b) Write working principle and applications of Linear Generator. 5
15. Discuss various geothermal energy sources in detail. 8
16. What are the advantages and disadvantages of using a solar cooker ? Are there places where solar cookers would have limited utility ? 8
17. What according to you are the major challenges in adopting solar power as a household power source ? Explain the working of a solar cell. 8
18. What do you understand by clean energy sources ? Describe one procedure to convert biomass into clean energy source. 8

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10. What are the limitations of extracting energy from the wind and the waves ?