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Code No: 157SQ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, July/August - 2022

NON-CONVENTIONAL ENERGY SOURCES

(Electrical and Electronics Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks

- 1.a) What is the impact of solar power on the present existing environment.
b) Discuss the analysis of solar radiation on tilted surface. [7+8]
- 2.a) Discuss the constructional features of a typical flat plate collector.
b) Explain the thermal analysis of the flat plate collector and its useful heat gained by the fluid. [7+8]
- 3.a) What is the principle and application of MHD generators.
b) Write short notes on the following
i) Fuel cells
ii) Electron gas dynamic conversion. [7+8]
- 4.a) What factors are considered for optimum capacity of energy storage system. Explain.
b) Discuss the constructional features of sensible heat storage. [7+8]
- 5.a) Explain the working principle of OTEC open cycle system.
b) What are mini hydel power plants? Discuss their economics. [8+7]
- 6.a) What are the sources and potentials of Wind energy.
b) Explain the betz criteria adopted for wind energy. [8+7]
- 7.a) How the bio gas is generated from the plant waste.
b) How the bio gas is used to operate an IC engine. [8+7]
- 8.a) What are the various resources of geo thermal energy. Explain.
b) Discuss any one method to harness the geothermal energy. [7+8]

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