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Sixth Semester B.E. Degree Examination, June/July 2024 Renewable Energy

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. With a neat sketch explain the principle of pyrheliometer measuring solar radiation. (10 Marks)
- b. With a neat sketch outline the working of flat plate concentrating collectors. (10 Marks)

OR

- 2 a. Briefly explain the working of solar water heater along with appropriate sketch. (10 Marks)
- b. Enlighten about solar photo voltaic cell in detail. (10 Marks)

Module-2

- 3 a. With a block diagram, explain Wind Energy Conversion System (WECS). (10 Marks)
- b. Derive an expression for power developed due to wind starting from the basic principle. (10 Marks)

OR

- 4 a. With a neat sketch, explain Darrius type vertical axis wind turbine in detail. (10 Marks)
- b. List in detail the advantages and disadvantages of wind energy conversion system. (10 Marks)

Module-3

- 5 a. Define an OTEC system. Write briefly about its working principle. (10 Marks)
- b. Sketch and explain the working of a Claude (open cycle) OTEC power plant. (10 Marks)

OR

- 6 a. Define an Tidal system. explain briefly in detail the components of tidal power plant. (10 Marks)
- b. With a neat sketch, explain double basin arrangement of Tidal power system. (10 Marks)

Module-4

- 7 a. Explain with a neat sketch the working of a Pelton turbine. (10 Marks)
- b. Sketch and explain Hydrological cycle in detail. (10 Marks)

OR

- 8 a. Explain essential elements of a hydro electric power plant using a general layout schematic sketch. (10 Marks)
- b. Sketch and explain the working of a Francis turbine, discussing its major components. (10 Marks)

Module-5

- 9 a. Briefly explain a typical geothermal field, using a schematic sketch. (10 Marks)
- b. Explain the working principle of vapour dominated power plant. (10 Marks)

OR

- 10 a. Discuss in detail about Biomass resources. (10 Marks)
- b. Write a note on production of biomass. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.