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Seventh Semester B.E. Degree Examination, Dec.2019/Jan.2020
Non Conventional Energy Sources

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. With sketches, explain production of oil from oil shale and Tar sands. (10 Marks)
- b. What is the need for alternate energy sources? Explain by considering solar energy. (05 Marks)
- c. Discuss the limitations of non conventional energy sources. (05 Marks)

- 2 a. Write notes on Beam and Diffuse radiation. (05 Marks)
- b. Explain spectral distribution of Extra terrestrial radiation. (05 Marks)
- c. With a neat sketch, explain working of pyranometer. (10 Marks)

- 3 a. Describe the principle of working of a solar pond with a neat sketch. (10 Marks)
- b. Write short notes on : i) Solar air heater ii) Concentrating collectors. (10 Marks)

- 4 a. With a neat sketch, explain the construction and working of liquid flat plat collector. (10 Marks)
- b. Explain briefly the parameters affecting the performance of a flat plat collector. (10 Marks)

PART – B

- 5 a. With a neat sketch, explain working of a photo voltaic cell. Draw I-V characteristics. (10 Marks)
- b. Explain with a neat sketch the working of vertical axis and horizontal axis wind mill. (10 Marks)

- 6 a. Sketch and explain single basin type tidal power plant. (06 Marks)
- b. Explain with a neat sketch, the working principle of closed cycle OTEC plant. (06 Marks)
- c. Explain with a diagram vapour dominated Geothermal power plant. (08 Marks)

- 7 a. Explain the construction detail and working of KVIC digester. (10 Marks)
- b. Explain the following : i) Photosynthesis ii) Energy plantation. (10 Marks)

- 8 a. Explain the process of electrolytic production of Hydrogen with a neat sketch. (10 Marks)
- b. Explain briefly methods of hydrogen storage and transportation. (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.