

III B. Tech II Semester Regular Examinations, April/May - 2019
ALTERNATIVE ENERGY SOURCES

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**
- ~~~~~

PART -A

1. a) What are the different solar energy collectors? [2M]
- b) What are the applications of Biomass? [2M]
- c) What are the properties of hydrogen energy? [2M]
- d) What are the Limitations of Electric Automobiles? [3M]
- e) Explain in brief about traction motors. [3M]
- f) How the Fuel cells are used in automobiles? [2M]

PART -B

2. a) What is the principle of solar photovoltaic power generation? Explain about solar cell with neat diagram. [7M]
- b) Explain different types of flat-plate collectors. [7M]
3. a) Explain the advantages and disadvantages of biogas plants. [7M]
- b) Discuss the photosynthesis of biomass with a neat diagram. [7M]
4. a) Explain the properties and sources of hydrogen energy. [7M]
- b) Explain the thermo-chemical production process. [7M]
5. a) Explain the design considerations of Electric vehicle. [7M]
- b) Explain briefly about the different methods of hydrogen transportation. [7M]
6. a) What are the major parts of electric car and explain its battery charging process? [7M]
- b) Discuss about the material requirement for Traction motors. [7M]
7. a) Explain the different types of Hybrid Electric Vehicles. [7M]
- b) Discuss the uses of fuel cells in automobiles. [7M]
