



VI SEMESTER B.TECH (ELECTRICAL & ELECTRONICS ENGINEERING)

MAKE-UP EXAMINATIONS, JUNE 2019

SUBJECT: RENEWABLE ENERGY [ELE 4024]

REVISED CREDIT SYSTEM

Time: 3 Hours

Date: 18 JUNE 2019

Max. Marks: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.

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| 1A | Define beam, diffused and global radiation. | (03) |
| 1B | Explain the construction and principle of operation of a Pyranometer with a neat diagram. | (04) |
| 1C | Calculate the number of daylight hours (day length) at Bangalore on 21 June and 21 December in a leap year. The latitude of Bangalore is 12° 58' N. | (03) |
| 2A | Explain the c-Silicon solar cell fabrication with necessary schematic. | (04) |
| 2B | Using Betz model of a wind turbine, derive the expression for power extracted from wind. | (03) |
| 2C | With the help of block diagram explain the operation of wind-Diesel Hybrid system. | (03) |
| 3A | What are the advantages and disadvantages of Horizontal axis and Vertical axis wind turbines. | (04) |
| 3B | List the sources of three categories of biomass. | (03) |
| 3C | Explain Liquefaction method of Biomass conversion process with a neat diagram. | (03) |
| 4A | Explain the operation of Bubbling Fluidized-Bed and Circulating Fluidized- Bed Gasifiers with neat diagrams. | (05) |
| 4B | Explain the working principle of Closed ocean thermal conversion cycle power plant technology with a neat diagram and also list the advantages and disadvantages of ocean thermal conversion cycle technology. | (05) |
| 5A | List the main components of Tidal power plant and explain the Single-basin, single-effect tidal energy conversion scheme with a neat diagram. | (05) |
| 5B | What are the direct and indirect uses of Geothermal energy and also list the advantages and disadvantages of Geothermal energy. | (05) |