

## VI SEMESTER B.TECH MAKEUP EXAMINATIONS JULY 2016

### SUBJECT: RENEWABLE ENERGY [ELE 322]

REVISED CREDIT SYSTEM

04 JULY 2016

Time: 3 Hours

MAX. MARKS: 50

#### Instructions to Candidates:

- ❖ Answer **ANY FIVE FULL** questions.
- ❖ Missing data may be suitable assumed.

- 1A. What is meant by renewable energy? Mention its advantages & disadvantages. (03)
- 1B. Write a note on
  - i. Primary & secondary energy sources.
  - ii. Conventional & non-conventional energy sources
  - iii. Greenhouse gas effect (04)
- 1C. What is the status of non-conventional energy sources in India? (03)
- 2A. Define the following:
  - i. Diffuse & Beam Radiation.
  - ii. Absorption & scattering of radiation.
  - iii. Solar constant. (04)
- 2B. Describe the following with a neat diagram.
  - i. Latitude angle ( $\Phi$ )
  - ii. Declination angle ( $\delta$ )
  - iii. Hour angle ( $\omega$ ) (04)
- 2C. Determine the sunset hour angle and day length at a location with latitude of  $32^\circ$  on march 30. (02)
- 3A. Explain the construction & working of sunshine recorder with a neat diagram. (03)
- 3B. Describe the construction & working of Flat plate collector with a neat diagram. (04)
- 3C. With a neat diagram explain the working principle of solar pond. Mention its applications. (03)
- 4A. Describe the construction and working of solar cooker with a neat figure. (04)
- 4B. Explain the working of each component of basic photovoltaic system integrated with power grid with a neat figure. (03)
- 4C. With a neat figure, explain the construction and working of wind generating system. (04)
- 5A. Explain the working of double output wind driven wound rotor induction generator with a neat diagram. (03)
- 5B. Discuss the advantages and disadvantages of wind energy conversion system? (03)
- 5C. Explain the factors affecting on bio-digestion of gas. (04)
- 6A. With a neat diagram, explain the working of KVIC diagram & mention its advantages and disadvantages. (04)
- 6B. Describe the working of Open cycle OTEC system (cloude cycle) with a neat diagram. (03)
- 6C. Describe the basic principle of tidal power generation with a neat figure. Mention its limitations. (03)