

6th Sem./ Electrical / 2022(S)

Th4 Renewable Energy

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. What is zenith angle?
 - b. Write at least two basic differences between Induction generator and synchronous generator.
 - c. What are the difference between Renewable energy and Non-Renewable energy?
 - d. Why is solar power not widely used?
 - e. Define solar constant?
 - f. Can wind energy make effective use of transmission lines? Justify.
 - g. What are the factors that determine the output from a wind energy converter?
 - h. What are the types of biogas digester?
 - i. What are the environmental impacts of using geothermal energy?
 - j. What is fermentation?
2. Answer **Any Six** Questions 6 x 5
 - a. Describe the operating principle of Solar photovoltaic system?
 - b. Explain principle of wind energy conversion. Define tip speed ratio?
 - c. What is Biomass and enlist various methods for obtaining energy from biomass.
 - d. Describe with neat sketch of different types of vertical axis wind turbine.
 - e. Describe with neat sketch Microhydel-PV system.
 - f. Explain briefly the process of Pyrolysis.
 - g. What are the limitations of Renewable energy sources?
3. Explain briefly Ocean Thermal Energy Conversion (OTEC) system with neat sketch. 10
4. Explain briefly induction generator used in wind power plant with neat diagram. 10
5. Describe single and double output system in wind power station. 10
6. Explain different types of solar collectors with neat sketch. 10
7. Write short on 5+5
 - (a) Wood gassifier
 - (b) MPPT System