

IV/IV B.Tech. (Supple) DEGREE EXAMINATIONS, JUNE- 2019**First Semester****ELECTRICAL & ELECTRONICS ENGINEERING****RENEWABLE ENERGY SOURCES****Time: Three Hours****Maximum marks:60****Answer Question No.1 Compulsory****12X1=12 M****Answer ONE Question from each Unit****4X12=48 M**

1.
 - a) Define collector efficiency
 - b) What is diffuse radiation
 - c) What are the components of solar water heater?
 - d) Define PV effect
 - e) What is meant by biogas?
 - f) What are the types of focusing collectors?
 - g) List any two renewable sources of energy
 - h) What is the approximate amount of total power generation in India?
 - i) Write any four differences between renewable and nonrenewable sources.
 - j) What are types of wind turbines based on rotation of shaft?
 - k) What is meant by geothermal power?
 - l) What are the components of solar water heater?

UNIT-I

2. Write a comparison between Renewable and Conventional Energy Sources.

(OR)

3. List down some applications of Thermal Energy conversion and Photovoltaic Conversion.

UNIT-II

4. What is the principle of solar photovoltaic power generation? What are the main elements of a PV system?

(OR)

5. Explain Extra terrestrial and terrestrial solar radiation.

P.T.O

UNIT-III

6. With a neat diagram, explain how wind energy can be converted into electrical energy

(OR)

7. a) Classify different wind turbines with diagram.
b) Explain the importance of torque coefficient of a wind turbine

UNIT-IV

8. Give the basic principle Ocean thermal energy convention (OTEC)

(OR)

9. What is geothermal energy? List out the geothermal regions in India. Explain the harnessing techniques of geothermal energy.



IV/IV B.Tech. DEGREE EXAMINATIONS, NOVEMBER- 2019

First Semester

CSE/EC/EE

RENEWABLE ENERGY SOURCES

Time: Three Hours

Maximum marks:60

Answer Question No.1 Compulsory

12X1=12 M

Answer ONE Question from each Unit

4X12=48 M

1.
 - a) What is meant by bio mass?
 - b) What is meant by geothermal power
 - c) What are the main components of wind conversion system?
 - d) What are types of wind turbines based on rotation of shaft?
 - e) Define the plant capacity
 - f) List out some of the Non-Conventional Energy Resources
 - g) Define Tip speed ratio
 - h) What are wind farms?
 - i) How the wind mills are classified?
 - j) Define the term Solar constant.
 - k) List down some applications of solar energy
 - l) What are the advantages and disadvantages of ocean wave energy?

UNIT-I

2. Write a comparison between Renewable and Conventional Energy Sources.

(OR)

3. Explain energy planning, energy efficiency and natural energy currents.

UNIT-II

4. What is the principle of solar photovoltaic power generation? What are the main elements of a PV system?

P.T.O

(OR)

5. Write short notes on
- a) Extra-terrestrial solar radiation
 - b) Terrestrial solar radiation

UNIT-III

6. Explain the principle and application of wind electric system. State the basic Components and their working in wind electric system.

(OR)

7. Distinguish clearly between:
- a) Constant speed constant frequency WTG unit.
 - b) Variable speed constant frequency WTG system.
 - c) Nearly constant speed constant frequency system.

UNIT-IV

8. What is meant by wave energy? Explain simple single pool tidal system.

(OR)

9. What is geothermal energy? List out the geothermal regions in India. Explain the harnessing techniques of geothermal energy.

