

Code No: **R163203D**

R16

SET - 1

III B. Tech II Semester Regular/Supplementary Examinations, August-2021
GREEN ENGINEERING SYSTEMS

(Common to Mechanical Engineering, Automobile 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**

**(14 Marks)**

1. a) Enumerate the advantages of solar collectors. [2M]
- b) What is the basic principle of wind energy conversion? [2M]
- c) Define Bretz criteria. [2M]
- d) Mention the difference between biomass and biogas. [3M]
- e) Write environmentally friendly materials used in manufacturing. [3M]
- f) What are the measures to reduce heat gain in buildings? [2M]

**PART -B**

**(56 Marks)**

2. a) What are the components of flat plate collector and explain the function of each? [7M]
- b) Explain the basic principle of PV cell and its I-V characteristics. [7M]
3. a) Describe different energy storage methods used in solar system. [7M]
- b) How wind energy systems are classified? Explain. [7M]
4. a) Explain the three basic kinds of geothermal resources. [7M]
- b) Define Anaerobic Digestion. Explain with a neat Schematic Common Circular type of Digester. [7M]
5. a) Explain the role of selection of fuels for environmentally friendly environment. [7M]
- b) Discuss about variable voltage variable frequency drives. [7M]
6. a) What is zero manufacturing? Explain. [7M]
- b) Explain the role of environment sustainable company in energy management. [7M]
7. a) What are the measures for energy saving in a green building? Explain. [7M]
- b) Explain the role of site planning in the construction of green buildings. [7M]

\*\*\*\*\*

|||||