A **Reg. No. :** | | | | | | | | | | | | |

Question Paper Code: U7A03

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Seventh Semester

Agricultural Engineering

21UAG703 – GREEN ENERGY TECHNOLOGY

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Hydroelectric energy provides about _____ of the energy consumed annually in the United States CO1- U

   (a) 4% (b) 12% (c) 30% (d)65%

2. Which source of energy is most likely to be depleted? CO1- U

   (a)Geothermal (b) Hydropower (c) Wind (d) Nuclear

3. The solar heater function is to convert the solar energy in to _____ CO1- U

   (a) Radiation (b) Electrical Energy (c) Thermal Energy (d) None of the above

4. From the sun the solar energy is radiated in the form of _____ waves CO1- U

   (a) Electromagnetic (b) Infrared (c) Transverse (d) None

5. What is the diameter of wind turbine blades? CO1- U

   (a) 220 feet (b)500 feet (c)100 feet (d) 300 feet

6. What are used to turn wind energy into electrical energy? CO1- U

   (a) Turbine (b)generators (c)Yaw motor (d) Blades

7. Factors affecting biogas production CO1- U

   (a) Temperature (b)pH value (c)Nutrients (d) all the above

8. _____is used to determine calorific value of both soild and liquid CO1- U

   (a) gravimetric (b) thermometer (c) bomb calorimeter (d) all the above

9. Biogas is produced through _____of organic CO1- U

(a) anaerobic digestion (b) thermo (c) global (d) none

10. _____is accompanied by the production of heat CO1- U

(a) organic (b) combustion (c) bioslurry (d) all of these

PART – B (5 x 2= 10Marks)

11. Define Kyoto protocol CO1- U

12. Explain about solar drying methods CO1- U

13. Define wind turbine generators CO1- U

14. Explain the physical properties of biomass CO1- U

15. Draw a neat sketch of Deen bandhu biogasplant CO1- U

PART – C (5 x 16= 80Marks)

16. (a) What are the different between renewable energy sources and non-renewable sources? CO1 U (16)

Or

(b) What is Global warming and Explain the role of renewable energy for mitigation of global warming? CO1 U (16)

17. (a) Briefly Explain about types of flat plate type solar collector CO1 U (16)

Or

(b) Explain about Solar Drying and solar cooker with neat sketch CO1 U (16)

18. (a) Explain the wind turbine rotors and wind turbine generators CO2- U (16)

Or

(b) Explain the Difference between Horizontal & Vertical Axis wind turbine and Explain about types of winds CO2- U (16)

19. (a) Explain in detail about Physical properties & thermal properties of Biomass. CO2- U (16)

Or

(b) Write in detail about Applications of gasifier. CO2- U (16)

20. (a) What are the differents between fixed dome and Floating dome digester CO2- U (16)

Or

(b) Explain about fixed dome biogas (deenbandhu) plant with neat sketch? CO2- U (16)