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Reg No.: \_\_\_\_\_

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree Regular and Supplementary Examination July 2021



Course Code: MR364

Course Name: ENERGY ENGINEERING AND MANAGEMENT

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer all questions, each carries 5 marks.*

- 1 What does albedo mean? (5)
- 2 What are the different categories of biomass? (5)
- 3 Explain measurement device used for measuring turbulent wind flow. (5)
- 4 Brief the various methods used to conserve energy in steam system? (5)
- 5 Explain incinerator process for medical /pharmaceutical waste management. (5)
- 6 How can waste transformation be done through aerobic composting? Explain anyone method in detail. (5)
- 7 Write short note on patent search websites. (5)
- 8 Explain the necessity of design registration in detail. (5)

**PART B**

*Answer any three questions, each carries 10 marks.*

- 9 a) Brief the working of pyranometer with necessary sketch (7)
- b) What is diffuse solar radiation? (3)
- 10 Calculate the annual cost for Ramanathan to use a table fan. The biomass energy consumption costs 8.9 Rs/kilowatt-hour (kWh). The table fan requires 200W and Ramanathan runs the fan 4 hours per day. (10)
- 11 a) What are the four different type of stresses does a turbine blade undergo? (3)
- b) Draw and explain the grid connected wind turbine. (7)
- 12 Give a detailed description about M and T process. (10)
- 13 a) With neat sketch explain the grid combination of diesel generator in wind turbine? (5)
- b) Elucidate about Biomass gasification. (5)

**PART C**

*Answer any two questions, each carries 15 marks.*

- 14 a) List the various sources and types of waste. (5)  
b) Explain various waste minimization techniques and comment your suggestion in improving e-waste management. (10)
- 15 a) Write a short note on physical and chemical properties of solid waste. (5)  
b) Explain waste collection and transfer stations? (5)  
c) Brief the effects on incineration of waste in present scenario. (5)
- 16 Brief the technology transfer model with necessary flow diagram. (15)
- 17 a) Difference invention and innovation? (5)  
b) Write short note on trade secrets. (5)  
c) Elucidate the necessity of patent. (5)

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