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Question Paper Code: 49706

B.E. / B.Tech. DEGREE EXAMINATION, AUGUST 2021

Elective

Mechanical Engineering

14UME906 - RENEWABLE SOURCES OF ENERGY

(Regulation 2014)

Duration: 1:45 hour

Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

(Answer any ten of the following questions)

1. Define heliostats.
2. What is solar constant?
3. List the characteristics of wind energy.
4. Mention the components of wind turbine generator units.
5. Classify the biomass resources.
6. List the factors affecting bio-digestion or generation of gas.
7. Define tidal range.
8. List the types of geo-thermal resources.
9. Define fuel cell.
10. Name any two thermo-chemical processes used for hydrogen generation.
11. Define Solar energy.
12. A solar cell gives a current of 0.5 A and the voltage of 0.4 V at maximum power point. What is the maximum power generated by the solar cell?
13. Illustrate the relationship between wind power and wind velocity.
14. Define cut-in wind speed.

15. What is pyrolysis?

PART – B (3 x 10= 30 Marks)

(Answer any three of the following questions)

16. Explain the depletion process of solar radiation as it passes through the atmosphere to reach at the surface of the earth. (10)
17. Discuss and explain the horizontal wind mills with neat sketch. (10)
18. Write about energy from biomass. (10)
19. What are the main types of OTEC power plants? Describe their working in brief. (10)
20. Explain the construction and working principle of fuel cell with neat sketch. (10)

