Roll No. :_____

CHARTERED INSTITUTE OF TECHNOLOGY, ABU ROAD

B.Tech. VIII Sem MODEL QUESTION PAPER-2, 2020

MECHANICAL ENGINEERING

8ME3A POWER GENERATION

4th Year / 8th Sem 10:30AM to 01:30PM DATE: ……

STAFF NAME: - SANDEEP GURJAR Maximum Marks: 80

Note: - Attempted all questions (2 question from each unit). All carrying equal marks (08).

UNIT-I

1. What do you understand by base load and peaking load? Why are base load plants loaded heavily?
2. Explain the effect of load factor on the cost of electricity generated?

OR

3. How is the load duration curve constructed?
4. The annual peak load on a 30 MW station is 25MW. The power station supplies load having maximum demands of 10 MW, 8.5 MW, 5 MW and 4.5 MW. The annual load factor is 0.45. find:
   i. Average load
   ii. Energy supplied per year
   iii. Diversity factor
   iv. Demand factor

UNIT-II

5. Explain the efficiency in steam power plant.
6. Describe the effect of variation of steam condition on thermal efficiency of a steam power plant.

OR

7. Explain the classification of a steam power plant.
8. Draw the diagram of a general layout of a steam power plant; also explain the various circuits in detail.

UNIT-III

9. Explain the factors which should be considered while selecting the site for hydroelectric Plant?
10. Explain a high head power plant giving its layout clearly?

OR

11. What is a Kaplan Turbine? How does it differ from a Propeller turbine?
12. What is a Dam? What are its various types? Explain.

UNIT-IV

13. What are the advantages of wind power? Explain the environment factor associated with wind power generation.
14. Discuss the merits of horizontal-axis wind machines and the vertical-axis wind machine. Under what circumstances vertical-axis wind machines is preferred over horizontal-axis wind machines?

OR

15. Classify the wind energy conversion systems (WECS) with its characteristics and applications.
16. Describe the different schemes for electric generation from wind power and also explain various application of wind energy?

UNIT-V

17. Derive the expression for conversion efficiency and power output of a solar cell?
18. Explain the different types of flat plate collectors?

OR

19. Elaborate the difference between focusing and non- focusing types Collectors?
20. Describe with the neat sketch, the working of solar power plant. What are its salient features?