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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech II Year II Semester Examinations, November/December - 2020
POWER SYSTEM - I
(Electrical and Electronics Engineering)

Time: 2 Hours   **Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks
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1.a) Explain the function of feed water heater and air pre-heater.
  b) Explain the working of fuel cell and their applications.   [8+7]

2. What is the function of a condenser in a steam power plant? Describe with a neat sketch any one type of condenser commonly used in power plants.   [15]

3. The capital cost of a hydro-power station of 50 MW capacity is Rs 1,000 per kW. The annual depreciation charges are 10% of the capital cost. A royalty of Re 1 per kW per year and Re 0·01 per kWh generated is to be paid for using the river water for generation of power. The maximum demand on the power station is 40 MW and annual load factor is 60%. Annual cost of salaries, maintenance charges etc. is Rs 7,00,000. If 20% of this expense is also chargeable as fixed charges, calculate the generation cost in two part form.   [15]

4. Define and explain the importance of the following terms in generation:
  a) Connected load   b) demand factor   c) average load.   [5+5+5]

5. In a string of 3 units, the capacitance between each link to pin to earth is 11% of the capacitance of one unit. Calculate the voltage across each unit and string efficiency when the voltage across the string is 33kV.   [15]

6. Explain different types of Insulators used in overhead lines.   [15]

7.a) What are bundled conductors? Discuss the advantages of bundled conductors, when used for overhead lines
  b) How the corona forms in power systems and write the advantages and disadvantages.
                                                                                  [8+7]

8. Explain the radial distribution system with neat diagram and list out its merits and demerits.   [15]

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