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Seventh Semester B.E. Degree Examination, Aug./Sept.2020
Power System Planning

Time: 3 hrs.

Max. Marks:100

Note: *Answer any FIVE full questions, selecting at least TWO full questions from each part.*

PART – A

1 a. Briefly explain the concept of least cost utility planning with the aid of logic used for planning. **(06 Marks)**
   b. Discuss the different planning tools. **(06 Marks)**
   c. Discuss any four load forecasting technique in power system. **(08 Marks)**

2 a. What is Co-generation? Briefly explain the two basic process topping and bottom cycle with a neat diagram. **(10 Marks)**
   b. List out in brief the National Action plan goals associated with generation planning. **(10 Marks)**

3 a. Explain the strategies for transmission system expansion in India. **(08 Marks)**
   b. What are the objectives of a sound pricing structure? Explain. **(06 Marks)**
   c. Write a short note on rural electrification. **(06 Marks)**

4 a. What is reactive, power compensation? List the advantages and disadvantages of any four compensating equipments. **(06 Marks)**
   b. Describe the major environmental hazards caused by fossil fired thermal plants and the methods to minimize them. **(08 Marks)**
   c. Explain with the help of V-T curve, the need of insulation co-ordination in power system. **(06 Marks)**

PART – B

5 a. What is system Adequacy and Security? **(04 Marks)**
   b. Explain in brief the following real time operation:
      i)   State estimation
      ii)   AGC
      iii) Economic load dispatch
      iv)   Stability. **(10 Marks)**
   c. Explain with the aid of schematic diagram, the various means of load management. **(06 Marks)**

6 a. With a neat diagram, explain the state estimation and its functions. **(10 Marks)**
   b. With a neat diagram, explain the power system simulator. **(10 Marks)**

7 a. Mathematically define and narrate the objective function of power system expansion planning. **(10 Marks)**
   b. What are the constraints observed during the optimization process of power system expansion planning? **(10 Marks)**

8 a. Explain the linear and dynamic programming method. **(10 Marks)**
   b. Discuss the problem modeling with respect to optimization technique. **(10 Marks)**

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