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10EE761

Seventh Semester B.E. Degree Examination, Dec.2016/Jan.2017
Power System Planning

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. What is planning process? Explain the planning with a block diagram. (06 Marks)
b. With a block diagram, explain the least cost utility planning. (08 Marks)
c. Discuss the different planning tools. (06 Marks)
- 2 a. Explain goals of national action plan. (07 Marks)
b. Explain power pooling and power trading. (06 Marks)
c. Explain dispatchability in transmission planning criteria. (07 Marks)
- 3 a. With block diagrams, explain the private participation with respect to ownership options and modes of participation. (10 Marks)
b. Explain the main objectives of a sound pricing structure with respect to rational tariffs. (10 Marks)
- 4 a. What is wheeling in power systems? Mention the objectives of wheeling. (06 Marks)
b. Explain greenhouse effect and technological impacts on power system planning. (08 Marks)
c. What is reactive power compensation? List the compensating equipments. (06 Marks)

PART – B

- 5 a. Explain reliability planning with optimal reliability characteristics. (07 Marks)
b. Explain the real time operations: (i) State estimation and (ii) Automatic generation control. (06 Marks)
c. Explain the regression analysis with respect to load prediction. (07 Marks)
- 6 a. With the help of block diagram, explain the computerized management of power systems. (10 Marks)
b. With a schematic diagram, explain the power system simulator. (10 Marks)
- 7 a. Develop a mathematical objective function of power system expansion planning. (10 Marks)
b. Discuss least-cost optimization problem for non-conventional power plants. (10 Marks)
- 8 a. Explain the linear programming method and the integer programming method. (12 Marks)
b. Define objective function and the costs associated with generation expansion planning. (08 Marks)

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