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10EE761

Seventh Semester B.E. Degree Examination, June/July 2017

**Power System Planning**

Time: 3 hrs.

Max. Marks:100

**Note:** Answer any FIVE full questions, selecting atleast TWO questions from each part.**PART – A**

- 1
  - a. Explain the functions of power system planning in detail and also discuss advantages and disadvantages of national and regional planning. (08 Marks)
  - b. With the help of block diagram, explain least cost planning. (06 Marks)
  - c. Explain various power system planning tools. (06 Marks)
- 2
  - a. What is Co-generation? State and explain categories of co-generation system. (10 Marks)
  - b. What are the options available for Power Sector Finance? Explain in detail Rural electrification planning and investment. (10 Marks)
- 3
  - a. Discuss pricing structure in brief. (10 Marks)
  - b. What is the need of private participation in generation planning? How it can improve power situation in our country? (10 Marks)
- 4
  - a. Define Wheeling in power system and list typical objective of wheeling. (05 Marks)
  - b. Explain the effect of power generation on environment. (07 Marks)
  - c. What are the sources of generation and absorption of reactive power in transmission and distribution lines? With the help of phasor diagram, explain how parallel capacitor with transmission line improves the power factor (08 Marks)

**PART – B**

- 5
  - a. What do you understand by power system reliability? Discuss the term system adequacy and system security as applied to power system reliability. (10 Marks)
  - b. Explain various means of load management. (10 Marks)
- 6
  - a. What do you mean by state estimation? With the help of neat diagram, explain function of state estimation. (10 Marks)
  - b. What is a Power system simulator? Explain its functions using block diagram. (10 Marks)
- 7
  - a. Explain the methodology to be adopted for optimal expansion planning of power system. (10 Marks)
  - b. Discuss least cost optimization problem for the power plant. (10 Marks)
- 8 Write short notes on :
  - a. Reactive power planning.
  - b. Tarriff making philosophies.
  - c. Any one method of optimization technique for solution by programming.
  - d. Constraints observe during optimization process of power system expansion planning. (20 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.