7E7041

Roll No. Total No of Pages: 4

7E7041

B. Tech. VII Sem. (Main / Back) Exam., Nov. – Dec. - 2018

Electrical & Electronics Engineering

7EX1A Power System Planning

Common with EX, EE

Time: 3 Hours **Maximum Marks: 80**

Min. Passing Marks: 26

Instructions to Candidates:

Attempt any five questions, selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.

Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL 2. NIL

UNIT-I

Q.1. (a) What is Power System planning? Explain the difference between the national and regional planning. [8]

(b) Describe in brief the electricity regulation and electrical forecasting schemes. Discuss in brief various types of planning tools. [8]

OR

Q.1 (a) Explain the structure of a power system with the help of a neat diagram and write the disadvantages of long term forecasting. [8

(b) What are the different types of challenges faced by a power system planning engineer? Explain the process of power system planning. [8]

UNIT- II

Q.2 (a) Explain the concept of rational tariff. Describe various components of rural electrification planning. [8]

(b) Explain the term generation planning. Explain the different methods of cogeneration. [8]

OR

Q.2 (a) In context to India, explain power pooling and power trading. Explain the concept behind financial planning. [8]

(b) Write short notes on -

(i) Transmission and distribution planning. [4]

(ii) Integrated power generation. [4]

UNIT- III

Q.3 (a) Explain power system simulator with the help of neat diagram. Explain power supply reliability and its planning in brief. [8]

(b) Explain the term state estimation and the function of state estimation with the help of a neat diagram. [8]

OR

Q.3 (a) Discuss about load management and load prediction in a power system. [8]

(b) Write short notes on on-line power flow studies and computerized management use in power system. [8]

UNIT- IV

Q.4 (a) Explain the term computer aided planning. How it is useful in power system? [8]

(b) Write short note on -

(i) Reactive power compensation [4]

(ii) Insulation coordination and its principles [4]

OR

Q.4 (a) What is Greenhouse effect? Discuss its technological impacts. [8]

(b) What is Wheeling? Explain the concepts of wheeling and wheeling charges in power system. [8]

UNIT- V

Q.5 (a) Describe the formulation of least cost optimization problem incorporating the capital for a thermal power plant. [8]

(b) Describe about minimum assured reliability constraints by using optimization methods by programming. [8]

OR

Q.5 (a) Explain about the operating and maintenance cost of various types of power plants. [8]

(b) Write a short note on optimal power system expansion planning. [8]
