

# CBCS SCHEME

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18EE824

## Eighth Semester B.E. Degree Examination, June/July 2023 Power System Planning

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions, choosing ONE full question from each module.**

### Module-1

- 1 a. What are the planning principles to be practiced for the development of power system? (06 Marks)
- b. To implement planning into action successfully, what are the systematic planning process components considered, briefly discuss about it. (08 Marks)
- c. Discuss about the electricity forecasting and forecasting techniques followed in the power sector to encourage proper usage of electricity. (06 Marks)

OR

- 2 a. What are the stages to be followed to prepare detailed project report to facilitates planning implementation successfully. (06 Marks)
- b. Discuss how enterprise resource planning system facilitates and execution of power utilities business processes in the synergistic way. (08 Marks)
- c. What are the factors found to affect a variety of utilities load before building a forecasting model? Discuss each factor briefly. (06 Marks)

### Module-2

- 3 a. Discuss the need of mobilizing resources form different investment agencies to execute financial planning and techno-economic viability in the power sector. (06 Marks)
- b. In what way private participation can be encouraged to involve in various financial parameters for investment as notified by the central electricity regulatory commission. (08 Marks)
- c. Discuss the importance of generation mix on the basis of load curve at various instants. (06 Marks)

OR

- 4 a. Explain the need of financial analysis to analyze risk and rate of return financial profitability of investment. (06 Marks)
- b. Discuss the importance of total system analysis and credit risk assessment with respect to reliability and economy of electric power supply. (08 Marks)
- c. Explain the clean-coal technologies and renovation and modernization of power plants in power sector. (06 Marks)

### Module-3

- 5 a. List of the transmission planning criteria to be adopted for a large generating complex and multiple cooridors (06 Marks)
- b. Explain the right-of-way and network studies required for transmission line clearance and healthy networks system. (08 Marks)
- c. In what way high-voltage transmission is important in power sector, explain. (06 Marks)

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.

**OR**

- 6 a. Explain the importance of high-voltage direct current transmission in power system networks. (06 Marks)
- b. Explain the usage of different types of conductor loading generally decided on the basis of ambient and maximum permissible conductor temperature. (08 Marks)
- c. Explain the importance of reactive power planning to maintain the voltages in normal operating conditions. (06 Marks)

**Module-4**

- 7 a. List out the basic principles of distribution planning and distribution code notified by state regulatory commission. (08 Marks)
- b. Explain the sub-transmission system which delivers energy from the transmission system to the primary distribution system. (06 Marks)
- c. List out the causes for equipment failures and improve greater reliability and quality planning in power system. (06 Marks)

**OR**

- 8 a. Explain the need of up-gradation of existing lines and sub-stations. (08 Marks)
- b. Explain the importance of system studies for meeting the load demand in power sector. (06 Marks)
- c. Explain the importance of reliability evaluation in the power system. (06 Marks)

**Module-5**

- 9 a. Discuss on demand response planning to motivate end-use consumers in response to changes in the price of electricity overtime. (06 Marks)
- b. To enrage consumer response and to facilitate communication with consumer, in what way demand – response programme with demand – response technologies useful, explain. (08 Marks)
- c. List out the principles for the electricity market. (06 Marks)

**OR**

- 10 a. Discuss on supply side efficiency for effective measures for better utilization of large capacity units. (06 Marks)
- b. Discuss on power markets as one of the modern plate-form for electricity markets. (08 Marks)
- c. Discuss on :  
 i) Power pool  
 ii) Distribution system operator in electricity market. (06 Marks)

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