## CBCS SCHEME

USN

**18EE824**

## Eighth Semester B.E. Degree Examination, June/July 2024

## 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 do you mean by planning process? Mention the step-by-step procedure to planning action with block diagram. **(10 Marks)**

b. Explain different power planning organization business models. **(10 Marks)**

**OR**

2 a. Explain Enterprise Resources Planning [ERP] requirements for electric power system with neat block diagram. **(10 Marks)**

b. Explain different forecasting techniques used in power system planning. **(10 Marks)**

### Module-2

3 a. With block diagram, explain private participation with respect to ownership options and modes of participation in power system planning. **(10 Marks)**

b. Explain the concept of credit-risk assessment for a power project during construction and operational stage. **(10 Marks)**

**OR**

4 a. Explain clean coal technologies used in coal based plants. **(10 Marks)**

b. Explain the assessment studies required for renovation and modernization of Thermal power plant. **(10 Marks)**

### Module-3

5 a. Explain the criteria for transmission planning in power system. **(10 Marks)**

b. What are the reasons and advantages favouring HVDC transmission lines? **(10 Marks)**

**OR**

6 a. Explain Grid formulation and compare existing grid and smart grid. **(06 Marks)**

b. Explain technical and economic aspect for planning density and size of substation in power system. **(06 Marks)**

c. Mention and explain different conductors used in transmission system. **(08 Marks)**

### Module-4

7 a. Explain the basic planning principles of distribution planning. **(10 Marks)**

b. What are the different basic distribution network used by utilities and explain radial and loop system with figure. **(10 Marks)**

**OR**

8 a. Explain generation Reliability planning critera and Transmission Reliability criteria. **(10 Marks)**

b. Explain the causes for quality of supply problems for a consumer. **(05 Marks)**

c. With flow diagram, explain reliability cost analysis. **(05 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.

## Module-5

9 a. What is demand response? Explain demand response planning with block diagram. (10 Marks)

b. What are the principles for the electricity market? (10 Marks)

**OR**

10 a. Name different types of power markets. (05 Marks)

b. List out the methods to solve optimal bidding problem. (05 Marks)

c. Briefly explain types of congestion management to manage transmission capacity in power system. (10 Marks)

* * * * *