

# CBCS SCHEME

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18EE824

## Eighth Semester B.E. Degree Examination, Dec.2023/Jan.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 is national and regional planning? Discuss the advantages and disadvantages. (07 Marks)
- b. Explain scenario planning is key in times of uncertainty. (05 Marks)
- c. Explain project planning with project completion life cycle. (08 Marks)

OR

- 2 a. Explain the factors that affect load forecasting modeling. (10 Marks)
- b. With the help of flow diagram, explain peak-load forecast. (10 Marks)

### Module-2

- 3 a. Explain briefly the purpose of economic analysis to allocate scarce resources efficiently. (10 Marks)
- b. Explain the requirement for renovation and modernization of hydro plants. (10 Marks)

OR

- 4 a. Explain the concept of credit-risk assessment for a power plant during construction and operational stage. (10 Marks)
- b. Discuss generation mix based on load-curve. (05 Marks)
- c. Explain total system analysis regarding system costs. (05 Marks)

### Module-3

- 5 a. Mention and explain types of conductors used in transmission system. (06 Marks)
- b. Explain the criteria for transmission planning in power system. (09 Marks)
- c. Compare existing grid and smart grid. (05 Marks)

OR

- 6 a. What are the reasons and advantages favoring HVDC transmission lines? (10 Marks)
- b. Explain right of way for transmission line clearance. (05 Marks)
- c. Explain network studies carried out in power system planning. (05 Marks)

### Module-4

- 7 a. Explain the rules of supply authority for electricity distribution system as per Electricity Act 2003. (10 Marks)
- b. With flow diagram, explain reliability cost analysis. (05 Marks)
- c. Explain generation reliability planning criteria. (05 Marks)

OR

- 8 a. Write short note on distribution reliability. (05 Marks)  
b. Explain transmission reliability criteria. (07 Marks)  
c. Explain briefly main components of rural electrification. (08 Marks)

Module-5

- 9 a. Explain energy efficiency programmes with neat block diagram. (10 Marks)  
b. What is demand response? Explain demand response planning with block diagram. (10 Marks)

OR

- 10 a. What is Hedging and explain hedging? (05 Marks)  
b. Explain the smart power market. (05 Marks)  
c. Briefly explain types of congestion management to manage transmission capacity in power system. (10 Marks)

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