

610606

Roll No. _____

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B. Tech. VI - Sem. (Main) Exam., (Academic Session 2021- 2022)

Electrical Engineering

6EE5 – 11 Power System Planning

Time: 2½ Hours

Maximum Marks: 120

Min. Passing Marks:

Instructions to Candidates:

***Part – A: Short answer questions (up to 25 words) 6 × 3 marks = 18 marks.
Candidates have to answer six questions out of ten.***

***Part – B: Analytical/Problem solving questions 3 × 10 marks = 30 marks.
Candidates have to answer three questions out of seven.***

***Part – C: Descriptive/Analytical/Problem Solving questions 3 × 24 marks = 72 marks.
Candidates have to answer three questions out of five.***

Schematic diagrams must be shown wherever necessary. Any data you feel missing may 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

PART – A

- Q.1** Name five electricity regions.
Q.2 Write the full form of DPR, LOLE & EIR.
Q.3 Define planning tools.
Q.4 Define wheeling.
Q.5 What do you mean by Generation Sources?
Q.6 What are the harmful effects of Global Warming?
Q.7 Write any four types of Interruption Indices.

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Q.8 Define outage and their types.

Q.9 Name two different methods/approaches for calculating the LOLE indice in interconnected system.

Q.10 What do you mean by Capacity model?

PART – B

Q.1 Explain the National & Regional planning. Also, write its advantages and disadvantages.

Explain the role of consultant in Power Planning Industry.

Q.2 What is electricity forecasting? What are types of electrical forecasting? Also, explain the factors affecting the forecasting.

Q.3 Explain reliability target and security requirement. Draw optimum reliability figure.

Q.4 Explain the following -

(i) Green House Effect

(ii) Reactive Compensation

Q.5 Explain the factors affecting generation planning.

Q.6 Explain interconnected system and factors affecting interconnection under emergency assistance. <https://www.btubikaner.com>

Q.7 Explain Interruption indices & Distribution reliability indices.

PART – C

Q.1 Explain Power System Reliability Evaluation considering/mentioning availability, forced outage rate, capacity model, load model and loss & load expectation.

Q.2 Describe transmission and distribution reliability evaluation including/discussing state space diagram for two component system (series components) and state space diagram for two components (parallel components).

Q.3 Describe computer aided planning and insulation coordination in detail.

Q.4 What do you mean by grid code, grid reliability services and stability? Also, explain electricity regulation.

Q.5 Explain data required for composite system reliability and effects of lateral distribution protection, effects of disconnects and effects of protection failures.