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Question Paper Code : 71679

M.E. DEGREE EXAMINATION, JUNE/JULY 2013.

Elective

Power Systems Engineering

PS 9262/10233 PS 204 — POWER SYSTEM PLANNING AND RELIABILITY

(Common to M.E. Power Management)

(Regulation 2009/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by load forecasting?
2. Define Weather sensitive load.
3. State probabilistic load model.
4. Draw a typical heat rate curve.
5. Write the expression for LOLP.
6. Define the term disturbance vectors with suitable example.
7. What is meant by contingency analysis?
8. List the various issues in planning the generation system.
9. What is the need for coordination of protective devices?
10. Write the steps involved in distribution system planning.

PART B — (5 × 16 = 80 marks)

11. (a) State and explain the discounted multiple regression technique for obtaining the NWS mean and variance of the system. (16)

Or

- (b) Write short notes on
 - (i) Energy sales forecast
 - (ii) Basic steps used to obtain peak demand fore casting. (8+8)

12. (a) Derive the expression for effective load distribution F^i (Le), clarify the use of this expression using a sample system. (16)

Or

- (b) Discuss the probabilistic transmission system reliability analysis for the evaluation of LOLP. (16)
13. (a) Evaluate process of the load flow probabilistic transmission system reliability analysis using Fuzzy logic. (16)

Or

- (b) Explain the determination of reliability indices in transmission system reliability analysis for following indices
- (i) LOLP (ii) E(DNS) (16)

14. (a) Discuss the various problems involved in radial distribution system integration with necessary diagrams. (16)

Or

- (b) Evaluate the designing process and factors considered for expansion planning in power system planning. (16)
15. (a) Draw and discuss the planning of substations and its various components rating with suitable example. (16)

Or

- (b) Explain the designing of protection system used in distribution system with neat diagram. (16)