Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MTPA - 201

M.E./M.Tech., II Semester

Examination, June 2016

Reliability Evolution of Power System

Time : Three Hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. a) Define the following terms (Any three):
   i) Reliability
   ii) Distribution function
   iii) Adequacy and security
   iv) Absolute measures
   v) Relative measures
   b) Explain the concept of random variables and how it is used in distribution functions?

2. a) What are the various methods to enhance reliability of a power system network. Explain any one of them.
   b) With the aid of suitable examples define and explain failure density function.

3. a) Explain the effect of following on reliability function.
   i) Wear in period
   ii) Preventive maintenance
   b) What is Hazard function? Derive its inter relationship with reliability function.

4. a) Discuss in brief about Monte Carlo simulation based reliability evaluation.
   b) Make comparison between
   i) Event space method and Decomposition method
   ii) Tie set and cut set method of reliability evaluation

5. a) Write down the various state equations used in any Markov modelling methods.
   b) Explain state enumeration method for frequency. MUT, MDT calculations.

6. a) With the help of suitable example explain the concept of LOLP.
   b) Explain probability array method in two inter connected systems. http://www.rgpvonline.com

7. a) What are the various data requirements for composite system reliability evaluation.
   b) With the help of necessary equations explain distribution system reliability evaluation for radial system.

8. Write short notes on any two:
   a) Importance of reliability allocation
   b) Reliability evaluation with component replacement
   c) Steady state probabilities
   d) Generation and transmission reliabilities

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