Code: R7410208

R07

B.Tech IV Year I Semester (R07) Supplementary Examinations, May 2013
RELIABILITY ENGINEERING & APPLICATION TO POWER SYSTEMS
(Electrical & Electronics Engineering)

Time: 3 hours   Max. Marks: 80

Answer any FIVE questions
All questions carry equal marks

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1   (a)   Explain the rules for combining probabilities of events.
    (b)   A certain item is manufactured at two plants. Plant 1 makes 70% of the requirement and
          plant 2 makes 30%. From plant 1, 90% meet a particular standard and plant 2 only 80%.
          Evaluate:
          (i) Out of every 100 items purchased by a customer, how many will be up to standard.
          (ii) Given that the item is standard, what is the probability that it was made in plant 2.

2   (a)   Explain series, parallel, series parallel networks.
    (b)   Explain conditional probability approach with example.

3   Derive the expected value and standard deviation of exponential distribution.

4   (a)   Explain the limiting state probability evaluation.
    (b)   Explain time dependent probability evaluation by using Laplace transform approach.

5   Explain the frequency and duration techniques by using Markov techniques.

6   Explain the merging of generation and load models.

7   Explain the weather effect on transmission line by using reliability indices.

8   Explain the performance reliability indices of radial networks.

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