Printed Pages : 3

EEE053

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 121857

Roll No.

B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15

RELIABILITY ENGINEERING

Time : **3** Hours] [Total Marks : **100**

Note : (1) Attempt all questions.

(2) Each question carries equal marks.

1 Answer any two parts of the following : **10×2=20**

(a) Write the main objectives of 'Reliability' and discuss its four main elements.

(b) Discuss different types of failures and plot the bath tub curve in the field of Reliability Engg.

(c) Explain various parameters of system effectiveness in reliability Engg.

2 Answer any two parts of the following : **10×2=20**

(a) What is the poisson distribution ? What are the mean, standard deviations and variance ?

(b) Explain the Bay's theorem for reliability concepts. Also mention its significances and drawbacks.

(c) Write short note on :

(a) Random number and Data Collection

(b) Data Analysis Procedures

(c) Conditional Probability

3 Answer any two parts of the following : **10×2=20**

(a) Differentiate between the following :

(i) Parallel system and series parallel system

(ii) Stand by and complex system.

(b) Write short notes on :

(i) Development of logic diagram.

(ii) Methods of reliability evaluation.

(c) Explain briefly Markov's method and frequency and duration method. Which method is mostly used in reliability engineering and why ?

4 Answer any two parts of the following : **10×2=20**

(a) Explain the term component redundancy and also mention the methods of reliability improvement.

(b) Explain briefly the types of redundancies with suitable examples.

(c) What are the effects of maintenance ? Also mention its importance ?

5 Answer any two parts of the following : **10×2=20**

(a) Write short notes on :

(i) Data reporting system

(ii) Data reduction and analysis.

(b) Explain with suitable example, life testing and its requirements. Also write down its different methods.

(c) What are the reliability test standards ? Also discuss the testing planning.