Printed Pages : 3

EIT063

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

PAPER ID : 113603

Roll No.

B. Tech.

(SEM. VI) THEORY EXAMINATION, 2014-15

SOFTWARE RELIABILITY

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

Note : (1) Attempt all question.
(2) All question carry equal marks.

1 Attempt any FOUR question. **5×4=20**

(a) Differentiate among Faults, Failures and Errors.

(b) Define Software Reliability in brief.

(c) What do you mean by Inspection Process? Discuss.

(d) How can you determine the number of latent defects in a software product during the testing phase?

(e) Differentiate between software and hardware reliability.

(f) Discuss how the reliability changes over the lifetime of a software product and a hardware product.

2 Attempt any FOUR question. **5×4=20**

(a) Define three matrices to measure Software Reliability.

(b) Draw the Life cycle of Failure and Correction Reports in software reliability.

(c) What is the currently known effectiveness of the defect detection process prior to release

(d) What is the rate of software failures and how does it change over time?

(e) What was the accuracy of estimating the actual value of project schedule?

(f) Why do we need documents and matrices in software reliability?

(g) What is the normalized number of in-process faults and how does it compare with the number of in-process defects?

3 Attempt any TWO question. **10×2=20**

(a) A team run test cases for 10 CPU hrs and identifies 25 failures. The effort required per hour of execution time is 5 person hr. Each failure requires 2 hr. on an average to verify and determine its nature. Calculate the failure identification effort required.

(b) Discuss the basic model of software reliability growth model.

(c) Explain the Software Quality Assessment Models with the help of a block diagram.

4 Attempt any TWO question. **10×2=20**

(a) Explain the Software Reliability Allocation Models with the help of a block diagram.

(b) Explain in brief the Evolution of Software Quality Assurance and Major SQA Activities.

(c) Explain briefly the following :

(i) Quality Planning and Control

(ii) Quality Improvement Process.

5 Attempt any TWO question. **10×2=20**

(a) What resources must be expended to achieve the reliability improvement? Use the logarithmic Poisson execution time model with a failure intensity decay parameter of 0.025/failure.

(b) Explain term Error Seeding, Failure Rate and Curve Fitting.

(c) Explain the significance of bath tube curve of reliability with the help of a diagram.