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Question Paper Code : 75574

5 Year M.Sc. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Elective

Software Engineering

XIT 011 — SOFTWARE RELIABILITY

(Common to 5 Year M.Sc. Information Technology)

(Regulation 2003)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Differentiate Error and Fault.
2. State few attributes of Dependable systems.
3. What are the factors to be considered for estimating software cost?
4. Name the phases involved in the software life cycle.
5. Define TQM.
6. What do you mean by fault tolerance? Give example.
7. State the need for prediction system.
8. State the importance of trend analysis.
9. What are the effects of failure?
10. Differentiate testing and debugging.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Discuss the importance of feasibility study in requirement analysis phase. (8)
- (ii) "Maintenance cost is more than the development cost" – Justify. (8)

Or

- (b) (i) Explain about various causes that leads to software unreliability. (8)
- (ii) Write a SRS for Railway ticket reservation and cancellation. (8)
12. (a) For developing Railway ticket reservation system, which software life cycle model will be more appropriate? Elucidate. (16)

Or

- (b) (i) Name few software project scheduling methods. Apply a scheduling technique for scheduling railway ticket reservation system. (8)
- (ii) Explain about the activities and the actors involved in inspection. (8)
13. (a) (i) Explain about various levels of process maturity in CMM. (8)
- (ii) Write a brief note on fault avoidance and fault removal. (8)

Or

- (b) (i) Elaborate the activities conducted by SQA group for attaining a high quality software. (8)
- (ii) Explain about various metrics for measuring software reliability. (8)
14. (a) (i) How do you ensure the accuracy of software reliability model? Discuss. (8)
- (ii) With a neat diagram, explain McCall's quality factors. (8)

Or

- (b) (i) Discuss in detail about reliability growth model and trend analysis. (8)
- (ii) Write a brief note on software cost models. (8)

15. (a) (i) Compare and contrast logical testing and functional testing. Give examples. (8)
- (ii) Briefly explain about fault tree analysis. (8)

Or

- (b) (i) Explain the scenario under which regression testing can be performed. (8)
- (ii) "Testing is indirectly proportional to maintenance" – Elaborate. (8)
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