Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 17302

M.E. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Elective

Computer Science and Engineering

CP 7026 — SOFTWARE QUALITY ASSURANCE

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How does testing help in producing quality software?
2. What is CMMI? What is the difference between CMMI and CMM?
3. State the merits of verification.
4. What do you mean by backward and forward traceability?
5. Define the characteristics of a good test case.
6. What are the roles and responsibilities of testers?
7. Mention the test adequacy criteria for structural testing.
8. Compare primary mutants with secondary mutants.
9. What are the factors that guide sandwich integration testing?
10. What is the need of automating testing activities?

PART B — (5 × 13 = 65 marks)

11. (a) (i) How does failure cost get reduced if we invest more in prevention and appraisal activities? Explain with an example. (7)

(ii) Discuss about the advantages of quality frameworks developed for quality assurance. (6)

Or

(b) (i) Explain the various activities performed in the quantitative approximation for quality management. (7)

(ii) Give an overview on defect taxonomy. (6)

12. (a) (i) Describe the different types of verification on the basis of parties involved in verification. (8)

(ii) How the verification process supports quality assurance? (5)

Or

(b) (i) How would you verify transform mapping and transaction mapping in a database project? (7)

(ii) Write short notes on inspections and Walk-throughs. How the milestones are fixed for both of them? (6)

13. (a) (i) Describe the basic concepts of equivalence partitioning with suitable example. (7)

(ii) Discuss about the importance of decision tables in testing. How are they prepared and used? (6)

Or

(b) (i) Explain in detail about category partition method with an example. How this can help testing activities? (7)

(ii) Illustrate the basic priciples of software testing. (6)

14. (a) (i) Describe the basic concepts of data flow diagram with an example. (7)

(ii) Explain the procedure for generating control flow diagram for multiple conditions cases. (6)

Or

(a) (i) Explain in detail about fault based testing. Write its importance. (7)

(ii) How the structural testing activity is visualized as finite state machine? Illustrate. (6)

15. (a) (i) Illustrate the features of exploratory testing. When this is required? (7)

(ii) Write short notes on usability testing. (6)

Or

(b) (i) Discuss about test adequacy criteria. (7)

(ii) Describe the basic concepts of security testing. (6)

PART C — (1 × 15 = 15 marks)

16. (a) How do you derive test cases from use cases? Illustrate all the possible test cases with examples. (15)

Or

(b) Choose an industry of your choice and demonstrate how mutation analysis can be carried out during testing. (15)

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