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Question Paper Code : 63333

M.E. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

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. What is a quality metric? Give any two examples of quality metrics.
2. List the origins of defects.
3. What are functional requirements?
4. List the skills needed by a test specialist.
5. Define a test case. Give example.
6. What is boundary value analysis? Give example.
7. State the difference between black box and white box testing approaches.
8. What is mutation analysis?
9. State the need for regression testing.
10. What is stress testing?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Discuss with examples the validation checks and verification checks in software process. (4)
- (ii) What is the purpose of process and product quality assurance? Why quality assurance for process is important? Discuss with examples. (12)

Or

- (b) (i) List and explain the software quality attributes with respect to product operation, product transition and product revision. (8)
- (ii) What is quality control? What are the main objectives of quality control? Discuss. (8)

12. (a) What are inspections? List the characteristics of inspections. What are the different stages in the inspection process? Discuss. (16)

Or

(b) Tabulate the activities carried out during reviews and walkthroughs and discuss the same. (16)

13. (a) (i) Why is it necessary to develop test cases for both valid and invalid input conditions? Discuss with example. (6)
- (ii) What is a test plan? List and explain the contents of a test plan. (10)

Or

(b) (i) Explain equivalence class partitioning testing technique with an example. (6)

(ii) What is a decision table? Explain how a decision table can be used in software testing. (10)

14. (a) (i) What is a control flow graph? How can a control flow graph be constructed from source code? Explain with an example. (12)

(ii) What is a finite state machine? Explain the use of finite state machine in software testing. (4)

Or

(b) Consider a web-based application through which the students of affiliated colleges of Anna University can pay their examination fees each semester. Discuss what types of testing must be carried out before the above application finds its actual use. (16)

15. (a) What is integration testing? Why integration testing? Explain with examples the different types of integration testing. (16)

Or

(b) What is software test automation? List and discuss the major objectives of software test automation. (16)