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

Question Paper Code : X 85382

M.E./M.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020
Elective
Computer Science and Engineering
CP 5005 – SOFTWARE QUALITY ASSURANCE AND TESTING
(Regulations 2017)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A **(10×2=20 Marks)**

1. Outline the objectives of software testing.
2. What is a test case ?
3. What is unit testing ?
4. Outline the objectives of acceptance testing.
5. Define robustness.
6. What is defect causal analysis ?
7. Define software quality.
8. Name any two quality metrics.
9. What is fault tolerance ?
10. Outline the need for hazard analysis.

PART – B **(5×13=65 Marks)**

11. a) What is a testing tool ? Highlight the features of testing tools. **(13)**

(OR)

b) i) Present an outline of white box testing and black box testing. **(5)**
ii) Present an outline of test planning. **(8)**

12. a) What is integration testing ? Outline the types of integration testing with an example. **(13)**

(OR)

b) What is a decision table ? Outline how decision tables can be used in software testing with an examples. **(13)**

13. a) Outline the process of generating test cases from a finite state machine with an example. **(13)**

(OR)

b) Discuss the importance of regression testing when developing a new software release. What test cases from the test suite would be more useful in performing a regression test ? Outline with an example. **(13)**

14. a) Elaborate McCall's quality model with a diagram. **(13)**

(OR)

b) Outline the testing maturity model with a diagram. **(13)**

15. a) Present an outline of safety assurance and damage control. **(13)**

(OR)

b) Outline risk identification for quality improvement. **(13)**

PART – C **(1×15=15 Marks)**

16. a) Develop a state transition model for the following senario,

Let's consider an ATM system function where if the user enters the invalid password three times the account will be locked.

In this system, if the user enters a valid password in any of the first three attempts the user will be logged in successfully. If the user enters the invalid password in the first or second try, the user will be asked to re-enter the password. And finally, if the user enters incorrect password 3rd time, the account will be blocked. **(15)**

(OR)

b) Outline the steps in hazard analysis using fault-trees with an example. **(15)**

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