CBCS SCHEME

USN

15CS552

Fifth Semester B.E. Degree Examination, Aug./Sept.2020

Introduction to Software Testing

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. What is Software Testing? Differentiate between functional and structural testing. **(05 Marks)**
b. With the help of test and debug cycle, explain testing and debugging process. **(08 Marks)**
c. List the types of metrics used in software testing and their relationships. **(03 Marks)**

OR

2 a. Define software quality. Explain the different measures of software quality. **(08 Marks)**
b. Explain the IEEE error and fault taxonomy and IEEE standard anomaly process. **(08 Marks)**

Module-2

3 a. Explain the triangle problem statement along with flow chart for traditional implementation. **(07 Marks)**
b. Explain decision table and its technique to solve triangle problem. **(06 Marks)**
c. What are the limitations of Boundary Value Analysis? **(03 Marks)**

OR

4 a. Explain the SATM (Simple Automatic Teller Machine) Problem. **(08 Marks)**
b. Describe string normal and strong robust equivalence class testing with a neat diagram. **(04 Marks)**
c. Explain below terms with a neat diagram:
(i) Robustness testing (ii) Worst case testing **(04 Marks)**

Module-3

5 a. Explain the fault-based adequacy criteria. **(08 Marks)**
b. Explain Millers test coverage metrics which are based on program graphs. **(08 Marks)**

OR

6 a. For a program graph G(P) and set of program variable V define the following :
(i) Defining node of variable
(ii) Usage node of variable
(iii) Definition use path with respect to variable
(iv) Definition clear path with respect to variable. **(04 Marks)**
b. Explain the terminologies of Mutation analysis. **(04 Marks)**
c. Write a structured triangle program draw the program graph and find the DD paths, DD path graph for the triangle program. **(08 Marks)**

Module-4

7 a. Explain about:
(i) Test Oracles (ii) Capture and Replay (iii) Test Cases. **(06 Marks)**
b. Explain basic principles that characterize various approaches and techniques for analysis and testing. **(10 Marks)**

OR

8 a. What is scaffolding? Describe generic versus specific scaffolding. **(08 Marks)**

b. Write a short notes on following :

(i) Quality and process

(ii) Risk planning. **(08 Marks)**

Module-5

9 a. Explain the terminology for components and frameworks. **(05 Marks)**

b. Explain the Top-down integration and Bottom-up Integration, with an example. **(05 Marks)**

c. Explain about path-based integration. **(06 Marks)**

OR

10 a. With a neat diagram, explain the tradition view of testing levels of water wall-life cycle and rapid Prototyping life cycles. **(10 Marks)**

b. Explain the steps to verify and validate the usability process. **(06 Marks)**

* * * * *