15IS63

Sixth Semester B.E. Degree Examination, Aug./Sept.2020
Software Testing

Time: 3 hrs.

Max. Marks: 80

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

Module-1

1 a. What is software testing? Why it is so important in SDLC? (08 Marks)
   b. Explain error and fault taxonomies. (05 Marks)
   c. Briefly explain testing using Venn Diagram. (03 Marks)

OR

2 a. Explain the two fundamental approaches used to identify test cases. (06 Marks)
   b. Explain various Test Metrics that exists in software testing. (06 Marks)
   c. Explain with a neat diagram Saturn wind shield wiper controller. (04 Marks)

Module-2

3 a. Explain the usage of Boundary value analysis for a function of two variables and highlight the limitations of Boundary value analysis. (08 Marks)
   b. Explain weak normal, weak robust, strong normal and strong robust equivalent class testing, considering example of next date problem. (08 Marks)

OR

4 a. Explain decision table and its technique to solve commission problem. (06 Marks)
   b. What is fault based testing? Explain the assumptions of fault based testing. (06 Marks)
   c. Explain terminologies of mutation based testing. (04 Marks)

Module-3

5 a. Explain: i) Statement testing   ii) Branch testing   iii) Path testing. (06 Marks)
   b. Define predicate node, du-paths and dc-paths. Give du-paths for lock, stock, total barrel, sales and commission for commission problem. (10 Marks)

OR

6 a. Explain slice based testing with an example. (06 Marks)
   b. What is scaffolding? Explain the purpose of scaffolding. (04 Marks)
   c. What is test Oracle? With a neat diagram explain self-check oracle. (06 Marks)

Module-4

7 a. List and explain 6 principles of analysis and testing. (07 Marks)
   b. Briefly discuss dependable properties with a neat diagram in process framework. (09 Marks)

OR

8 a. Discuss basic elements of analysis and test plan. (08 Marks)
   b. Explain clean-room process with a neat diagram. (08 Marks)

Module-5

9 a. Explain alternative life-cycle model. (08 Marks)
   b. Describe Top-down and Bottom-up Integration strategies. (08 Marks)

OR

10 a. Explain call graph based integration with the help of
       i) Pairwise Integration   ii) Neighbourhood Integration (10 Marks)
    b. Define Regression and Progression testing. (06 Marks)