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**Question Paper Code : 80851**

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2024.

Sixth Semester

Information Technology

IT 8076 — SOFTWARE TESTING

(Common to Computer Science and Engineering/Computer and Communication Engineering)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define software testing.
2. Differentiate error, bug and defect.
3. Define test case. Give its structure.
4. What is the need for coverage analysis?
5. Discuss the merits of bottom up integration testing.
6. What is smoke testing?
7. Define work breakdown structure.
8. What are the basic skills of a test specialist?
9. What are walk throughs?
10. What is the purpose of programmed macros?

PART B — (5 × 13 = 65 marks)

11. (a) Give the internal structure of TMM and explain about its maturity goals at each level. (13)

Or

- (b) Explain about the origin of defects. Also describe the major classes of defects in the software artifacts. (13)

12. (a) Compare static and structural testing. With suitable example bring about state based testing.

Or

- (b) How data flow testing aid in identifying defects in variable declaration and its use? Explain with an example.

13. (a) Write the importance of security testing and the consequences of security breaches. Also write the various areas which has to be focused on during security testing.

Or

- (b) Explain about configuration testing and compatibility testing. Write down the procedure to identify the hardware and software for configuration testing.

14. (a) (i) Illustrate various components of test plan with an example. (7)  
(ii) Discuss the various challenges that are commonly faced by testing service organization. (6)

Or

- (b) (i) Explain the basic structure of testing group. (7)  
(ii) Compare and contrast the role of debugging goals and policies in testing. (6)

15. (a) Analyse the need for software test automation. And explain the process of software test automation with neat diagram.

Or

- (b) Discuss the purpose of test metrics. Also explain about project, progress and productivity metrics in detail.

PART C — (1 × 15 = 15 marks)

16. (a) Demonstrate black box test cases using equivalence class partitioning and boundary value analysis to test a module for online ticket booking system. (15)

Or

- (b) Explain the significance of control flow graph and cyclomatic complexity in white box testing with a pseudo code for sum of first n alternate odd numbers. Also mention the independent paths with test cases. (15)