BT-7/D-22 **47244**

SOFTWARE VERIFICATION & VALIDATION & TESTING

Paper–PE–CS–D–403 A

Time allowed : 3 Hours] [Maximum Marks : 75

Note : Attempt **five** questions in all, selecting at least **one** question from each unit. All questions carry equal marks.

UNIT-I

1. Describe the stages involved in Software Development Life Cycle (SDLC). List the popular SDLC models followed in industry and give a brief overview of each.

2. Describe the following in the context of software testing :

   (i) Verification and Validation.

   (ii) Error, fault, and failure.

   (iii) Test cases and Test Oracles.

UNIT-II

3. What is Functional Testing? Describe the following techniques used in Functional Testing :

   (i) Equivalence Class Partitioning

(ii)   Boundary Value Analysis

(iii) Cause-Effect Graphing.

4.   (a)   What is the basic idea behind Data Flow testing? What are its advantages?

     (b)   Define Mutation testing and bring out the distinction between Decision Mutations, Value Mutations and Statement Mutations.

UNIT-III

5.   (a)   Why should test cases be prioritized? What are the types and techniques of prioritization?

     (b)   What is the need of Regression testing? How is Regression testing done?

6.   What is the reason for implementing levels of testing? Why is Unit testing important? How is it different from Integration testing and System testing? Also, list and describe the types of Integration testing.

UNIT-IV

7.   (a)   Define Software Quality. What is ISO-9000 Certification in the context of Software Quality?

     (b)   What is the difference between McCall and Boehm's Software Quality Models?

8. (a) What are the advantages of Adhoc Testing and what are its types ?

   (b) What are the benefits and drawbacks of Exploratory Testing?