

Roll No. ....

**67242**

**MCA 5th Semester (with New Notes)  
(Non CBCS) Examination – December, 2018**

**SOFTWARE TESTING & QUALITY ASSURANCE**

**Paper : MCA-502**

**Time : Three Hours ]**

**[ Maximum Marks : 80**

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*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

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**Note :** Attempt *five* questions in all. Question No. 1 will be *compulsory*. In addition to *compulsory* question, students will have to attempt *four* more questions selecting *one* question from each Unit.

**1. Briefly discuss the following :**

- (a) Test case, test suite and test scenario
- (b) Mutation Testing
- (c) Incremental Testing
- (d) Debuggers
- (e) FTR
- (f) Pareto Principles to Software Quality Assurance
- (g) Software Safety and Hazards Analysis

(h) Features Affecting Software Quality

**UNIT – I**

2. (a) Explain the term software testing. What are different kinds of software testing performed on a target software ?  
(b) 100% Branch overage leads to 100% statement coverage. Do you agree on this statement ? Justify your answer.
3. (a) Explain the boundary value analysis testing techniques with the help of an example.  
(b) What do you understand by data flow guided testing ? Explain.

**UNIT – II**

4. (a) Explain the concept of test data generation and test drivers in detail.  
(b) Distinguish between alpha and beta testing. How are the test cases designed for these tests ? Are the test cases for these types of tests necessarily identical ? Explain your answer.
5. (a) What are the various categories of testing metrics for software ? Discuss with the help of suitable example.  
(b) Distinguish between the static and dynamic analysis of a program. Explain at least one metric that a static analysis tool reports and at least one metric that a dynamic analysis tool reports. How are these metrics useful ?

**UNIT – III**

6. (a) What do you mean by OO Testing ? What are the various issues related with OO Testing ? Differentiate between Object-oriented testing and Traditional Testing.  
(b) Describe the major software quality assurance activity and indicate their importance.
7. (a) Discuss in detail the concept associated with software review and inspection process in software quality.  
(b) Why should "testing" begin with object-oriented analysis and design ? Discuss.

**UNIT – IV**

8. (a) What is software reliability ? State its significance in software testing and quality assurance.  
(b) State the need for SQA plan. Specify the various people involved in the SQA group and also point out their role.
9. What do you mean by software quality standards ? Illustrate their essence as well as benefits. Compare ISO 9000 and SEI-CMM quality models.