

Roll No .....

**MCTA/MCIT-302(A)**  
**M.E./M.Tech., III Semester**

Examination, June 2016

**Software Testing and Quality Assurance (Elective)**

*Time : Three Hours*

*Maximum Marks : 70*

**Note:** Attempt any five questions. All questions carry equal marks.

1. a) What is a test metric? List the various test metrics associated with software testing. Explain any two. 7  
 b) What do you mean by micro and macro processes of object oriented technologies? 7
2. a) How is object oriented testing is different than procedural testing? Explain its. 7  
 b) What are test comparators? How is activity of debugging different from testing? 7
3. a) Explain about the various techniques for defect prevention in quality assurance beyond testing. 7  
 b) Explain the following terms: 7  
     i) Test case and testing planning  
     ii) Test suite  
     iii) Test obligation and test adequacy criteria.
4. a) State the purpose of SQA planning and discuss about the various steps involved in SQA planning. 7  
 b) Define software reliability. What is the difference between hardware and software reliability? 7

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5. a) Explain the term fault tolerance and fault avoidance with reference to software reliability. 7  
 b) Differentiate debugging from testing. Describe following three debugging techniques 7  
     i) Brute force  
     ii) Back tracking  
     iii) Cause elimination
6. a) Explain HCL requirements and design process. 7  
 b) Do you think that good software requirement lead to good software quality? Discuss briefly from requirements engineering perspective. 7
7. a) Define the term software metric. How will you make use of software metric in quantitatively assessing the quality of a software product? 7  
 b) Explain in brief OOD models. 7
8. Write short notes on the following: (Any four) 14  
     a) Testing web based application  
     b) HCL testing  
     c) Test case design for OO software  
     d) Boundary testing  
     e) Security and reliability

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