

UNIVERSITY OF PUNE  
[4364]-711

B. E. (Computer Engineering)  
Software Testing and Quality Assurance  
(2008 Course) Elective -II

Total No. of Questions : 12 [Total No. of Printed Pages :2]  
[Time : 3 Hours] [Max. Marks : 100]

**Instructions :**

- (1) Answers to the *two sections* should be written in *separate answer-books*.
- (2) From section I answer (Q1 or Q2) and (Q3 or Q4) and (Q5 or Q6)
- (3) From section II answer (Q7 or Q8) and (Q9 or Q10) and (Q11 or Q12)
- (4) Assume suitable data, if necessary.
- (5) Figures to the right indicate full marks.

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**SECTION-I**

- Q1.
- a) Explain the steps involved in testing life cycle [12]
  - b) What are the origins of the defects in the software system [6]

**OR**

- Q2.
- a) Explain defect life cycle for removing defects in the software system [10]
  - b) What is an importance of testing in software productions cycle [6]
- Q3.
- a) What is the requirement based testing? explain with suitable example [10]
  - b) What is system testing? Explain with example [6]

**OR**

- Q4.
- a) Explain test case design criteria for black box testing [8]
  - b) Explain following types of Testing [8]
    - 1) Security testing
    - 2) Integration testing

- Q5.
- a) What is mutation Testing? Explain the problems with mutation testing [10]
  - b) What is test adequacy criteria for white box testing [6]

**OR**

- Q6.
- a) Explain graph based testing for identifier naming [8]

b) What is data flow testing and path testing [8]

**SECTION-II**

Q7.

a) What are parameters for Object Oriented Testing [8]

b) Explain the following types of Testing [8]

1) Validation Testing 2) Random Testing

**OR**

Q8.

a) Explain the goal question metric for testing [8]

b) Explain the following types of testing [8]

1) Accepting Testing 2) Sanity Testing

Q9.

a) Explain software quality metrics with suitable example [8]

b) Explain system testing with the help of winrunner [8]

**OR**

Q10.

a) Define six sigma principles? Explain how six sigma principles improves quality of the software system [10]

b) Explain functional testing with the help of rational robot [6]

Q11.

a) Explain the effect of ISO quality model on software quality [8]

b) Explain load runner testing tool [8]

**OR**

Q12.

a) Explain black box testing with help of suitable testing tool [10]

b) Explain GUI testing for web application [8]