

**Paper Code: BCA-307**  
**Paper: Software Testing**  
**Paper ID 20307**

L	T/P	C
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**Pre-requisite :**

- BCA 204 Software Engineering
- Knowledge and skills of at least one programming language

**Aim**

- To understand the importance, limitations and challenges of testing process.

**Objectives**

- To gain knowledge of various functional and structural testing techniques
- To gain knowledge of various activities and levels of testing
- To learn the issues in testing of object oriented and internet based applications

**INSTRUCTIONS TO PAPER SETTERS:**

**Maximum Marks: 75**

1. Question No. 1 should be compulsory and cover the entire syllabus. This question should have objective or short answer type questions. It should be of 25 marks.  
2. Apart from Question No. 1, rest of the paper shall consist of four units as per the syllabus. Every unit should have two questions. However, student may be asked to attempt only 1 question from each unit. Each question should be 12.5 marks.

**UNIT -I**

**Introduction:** What is software testing and why it is so hard? Psychology and economics of software testing, Principles of Software Testing , Error, Fault, Failure, Incident, Error and Fault Taxonomies, Test Cases, Limitations of Testing, Code inspections , desk checking, group walkthroughs and peer reviews. Overview of Graph Theory for testers. [T1,T2, R1]

**[No. of Hrs: 11]**

**UNIT-II**

**Functional Testing:** Boundary Value Analysis, Equivalence Class Testing, Decision Table Based Testing, Cause Effect Graphing Technique.

**Structural Testing:** Path testing, DD-Paths, Cyclomatic Complexity, Graph Metrics, Data Flow Testing, Slice based testing [T1,R2, R8]

**[No. of Hrs: 11]**

**UNIT-III**

**Testing Activities:** Unit Testing, Levels of Testing, Integration Testing, System Testing, Debugging, Regression Testing, Extreme Testing [T1,T2,R8]

**[No. of Hrs: 11]**

**UNIT-IV**

**Object Oriented Testing:** Issues in Object Oriented Testing, Class Testing, GUI Testing, Object Oriented Integration and System Testing.

**Testing Internet applications:** Overview, challenges and strategies of testing internet applications. [T1,T2]

**[No. of Hrs: 11]**

**TEXTBOOKS:**

[T1]Paul C. Jorgensen, "Software Testing- A Craftsman's Approach", Second Edition, CRC Press, 2008

[T2]Glenford Myers, "The Art of Software Testing", John Wiley & Sons Inc., New York, 1979.

**REFERENCES:**

[R1]Paul Ammann and Jeff Offutt, Introduction to Software Testing, Cambridge University Press, Cambridge, UK, ISBN 0-52188-038-1, 2008.

Note : A Minimum of 40 Lectures is mandatory for each course.

Syllabus of Bachelor of Computer Applications (BCA), approved by BCA Coordination Committee on 26<sup>th</sup> July 2011 & Sub-Committee Academic Council held 28<sup>th</sup> July 2011. W.e.f. academic session 2011-12