



***“INVESTING IN AFRICA’S FUTURE”***  
**COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE (CBPLG)**

**NCSE 300: SOFTWARE TESTING AND QUALITY ASSURANCE**

**END OF FIRST SEMESTER EXAMINATIONS**

**NOVEMBER 2022**

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**DURATION: 3 HOURS**

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### **INSTRUCTIONS**

Answer the question as per the instructions given in the sections  
Start **each** question on a new page on your answer sheet.

The marks allocated to **each** question are shown at the end of the section.

### **Section A (20 Marks)**

**Q.1 Choose the correct or the best alternative in the following: (2×10)**

- i. Which of the following is not part of the Test document?  
A. Test Case

- B. Requirements Traceability Matrix [RTM]
  - C. Test strategy
  - D. Project Initiation Note [PIN]
- ii. Why should testing be done?
    - A. To ensure the correctness of a program
    - B. To find errors in a program
    - C. To establish the reliability of a program
    - D. To certify the effectiveness of a Program
  - iii. Which of the following is not included in failure costs?
    - A. rework
    - B. repair
    - C. failure mode analysis
    - D. none of the mentioned
  - iv. Which of the following testing technique deeply emphasizes on testing of one specific module?
    - A. Inter-system testing
    - B. Gorilla Testing
    - C. Breadth Testing
    - D. Fuzz Testing
  - v. Which of the following tool is not an open-source tool?
    - A. Cucumber
    - B. Selenium
    - C. Bugzilla
    - D. BugHost
  - vi. The following statement is related to which of the below options:  
 "It determines the quality of processes used to create a quality product. It is system of management activities, and preventive process. It applies for entire life cycle and deals with process?"
    - A. Quality control
    - B. Validation
    - C. Verification
    - D. Quality Assurance
  - vii. Optimization, Defect Prevention, and Quality Control. Its come under the
    - A. CMM Level 2
    - B. CMM Level 3
    - C. CMM Level 4
    - D. CMM Level
  - viii. Defects generally fall into the following categories?
    - A. WRONG
    - B. MISSING
    - C. EXTRA
    - D. All the above
  - ix. An Important metric is the number of defects found in internal testing compared to the defects found in customer tests, Status of test activities against the plan, Test coverage achieved so far, comes under
    - A. Process Metric
    - B. Product Metric
    - C. Test Metric
    - D. None
  - x. Which is non-functional software testing?
    - A. Unit Testing
    - B. Block box testing
    - C. Performance Testing
    - D. Regression testing

### Section B (40 Marks)

**Q2. Answer any Five questions from Section B.**

**(8×5=40)**

- a. Define quality as viewed by the different stakeholders of software development and usage.
- b. Explain the following for Testing Process-
  - i. Misconceptions
  - ii. Test Strategy
  - iii. Test Planning
- c. What is JMeter Testing? Explain atleast three the features of JMeter?
- d. What is the difference between Continual vs. Continuous Improvement Cycle?
- e. What traceability matrix? Explain requirement traceability matrix with example. List advantages of requirement traceability Matrix.
- f. What are the skill set required by software tester?
- g. What is process for Mutation testing? Apply mutation testing on following code.

```
Read Age
If Age > 14 Doctor = General Physician
End if
```

and Data set is 14, 15, 0, 13
- h. Why Selenium? Discuss different Selenium components.

### Section C (40 Marks)

**Q3. Answer any two questions from Section C.**

**(20×2=40)**

- a. Discuss how Six Sigma improves the quality of the software. Explain the terms DMAIC & DMADV.
- b. Discuss,
  - i) Product quality metrics.
  - ii) In-process quality metrics
- c. Identify the Software Quality Attributes for the following scenario:  
A software company is in a process of building social networking site which will have very large number of users in near future. Also company wish to add new features in this site and during addition of new features site should provide all the current features without any disturbance. What

top quality attributes is being addressed by this tactic? Justify your answer.

**END OF PAPER**

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