

THE OPEN UNIVERSITY OF SRI LANKA
 DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
 B.Sc. DEGREE PROGRAMME 2013/2014
FINAL EXAMINATION
CPU3147: SOFTWARE QUALITY ASSURANCE
DURATION: TWO HOURS ONLY (2 HOURS)



18th June, 2014

Time: 9.30 a.m. to 11.30a.m.

Answer **FOUR** Questions **ONLY**.

Q1).

- a.
- Test planning can be considered as one of most challenging aspects of software testing. List down three (03) guidelines that you should follow to create a test plan.
 - "Test plan is a living document"*. Do you agree with this statement? Justify your answer.
- b. The Sri Lanka Cricket Board (SLCB) has come up with a web application designed for Sri Lanka Premier League (SLPL) cricket tournament. This application helps the visitors to register as cricketers for one of the SLPL cricket teams. Once registered, the application will display the names of the registered cricketers and show them for bidding. The application is already developed and ready for testing. If you are the tester of the consulting software firm entrusted for quality assurance of this web application and the following is one of the scenarios to be tested,

In the registration form, there is a field to enter "Age". Below are the requirements.

- *This should not be a dropdown list.*
 - *Should be a text box.*
 - *The user has to enter the data using keyboard and it should allow only numeric values*
 - *Age of the applicant should be between 18 and 35.*
 - *If invalid data entered, should display warning message as "Age should be within 18 – 35"*
- What is the best test designing approach that you can use to test this scenario? Black box or White box approach? Give reasons for your selection.
 - State three (03) techniques (which comes under the above selected approach) that you can use to generate test scenarios for "Age" text box.
 - Write down five (05) test cases to test "Age" text box.

Element1	Element2	Element3	Element4	Element5

Q2).

- a. The producer of a product views the quality of the product differently from the customer who uses that product.
 - i. Define the *producer's* view of quality, and the *customer's* view of quality.
 - ii. List down three (03) characteristics of a product produced from both the producer's view and customer's view.
- b.
 - i. List down the *costs of quality*? Briefly explain each.
 - ii. '*External failure costs can be more devastating...*' Do you agree with this statement? Justify your answer.
- c.
 - i. The effectiveness of finding defects by reviewing and testing can be improved by using independent testers. List down four (04) advantages of independent testing.
 - ii. Test competency is based on two (02) criteria. Briefly explain them.

Q3).

- a. Ajith is the Quality Assurance Lead of a project and has identified list of risks in his project. Risks are generally classified into two types. Categorize the following risks based on the type.
 - i. The system is integrated with a separate system which calculates tax and a payment gateway
 - ii. An open source software which has not been used previously will be used after customizing according to the client's needs
 - iii. Senior Test Engineer of the project will be on leave for 2 weeks during test execution
 - iv. Software will be built using new technologies
 - v. Customer deadline is fixed and development team is delaying the "build" for testing due to some delays in the development
- b.
 - i. What are the four (04) stages involved in risk management? Briefly explain them.
 - ii. List down four (04) risks associate with software testing.
- c. What are the key areas that include in Configuration Management procedure?

Q4).

- a. "*Even though testing was done thoroughly for software, there can be bugs in the products delivered*"
 - i. Do you agree with the above statement? Give reasons.
 - ii. List down four (04) common problems in the software development process from the quality assurance perspective.

b. "Static testing: No code execution".

- i. Is this a true statement?
- ii. What are the people-based static testing techniques? Briefly explain each technique.
- iii. You have been asked to prepare a presentation on the benefits of having static testing for a software project. State the main points that you will include to this presentation.

c. What is the difference between *functional* and *non-functional* testing?

Q5).

a.

- i. What are the key dimensions of software quality?
- ii. List down four (04) quality factors and briefly describe each of them.

b.

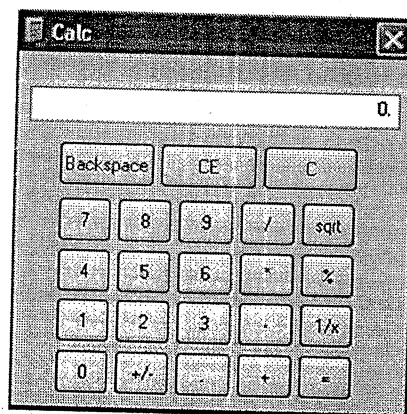
- i. Briefly explain why the requirement errors are generally the most expensive errors to repair.
- ii. What are the actions that can be taken to prevent requirement errors?

c. V model is a very popular lifecycle model in the software industry.

- i. What is the process involved in the V Model?
- ii. Draw the V model diagram

Q6).

a.



This is a calculator developed as per a client requirement and released for quality assurance (QA). The QA team has already written the test cases referring the requirements document. Following are some of the requirements stated by the client.

- The product should be able to calculate numeric values and should provide the answers in numeric format.
- There should be the following buttons
 - Numbers 0 – 9 (should start from bottom)
 - +
 - -
 - /

- *
- =
- .
- Backspace
- CE
- C
- There should be a text area to display the results
- There should be window buttons to minimize and maximize the window
- It should display the software name as "MCalc" with the below image



Based on the above scenario, provide answer to the following questions.

- i. Are there any UI defects you found in this product? If so, mention them.
 - ii. When you find any defect, it's a practice to raise them in a defect management tool, which is used for the project. Mention four (04) major items to be included in a defect.
 - iii. Draw the defect life cycle.
 - iv. Mention two (02) defect tracking tools
- b.
- i. What is *test automation*?
 - ii. List down four (04) features of automated software testing system.
- c.
- i. What is the difference between *load* and *stress testing*?
 - ii. What is the most common objective of load testing? List down four (04) other objectives of load testing.

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