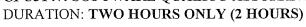THE OPEN UNIVERSITY OF SRI LANKA
DEPARTMENT OF COMPUTER SCIENCE
B.Sc. DEGREE PROGRAMME 2016/2017
FINAL EXAMINATION
CPU3147: SOFTWARE QUALITY ASSURANCE
DURATION: **TWO HOURS ONLY (2 HOURS)**

30th July, 2017   **Time: 9.30 a.m. to 11.30a.m.**

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

Q1).

I. Briefly explain the following attributes of a good test case:

    a. Effectiveness

    b. Exemplary

    c. Evolvable

    d. Economical

II. Consider the following test case template prepared by a QA Engineer to maintain their test cases. Describe briefly the following elements of a test case.

    a. Test case ID

    b. Test case title

    c. Pre-condition

    d. Test steps

    e. Expected results

    f. Actual results

III. Following are identified as the common problems in the software development process. Suggest in brief a solution for each to overcome the problem.

    a. Poor requirements

    b. Unrealistic schedule

    c. Inadequate testing

    d. Changes to the requirements

    e. Miscommunication

Q2).

I.

    a. State the factors that need to be considered when selecting a test case design technique.

    b. Describe the terms "entry criteria" and "exit criteria" in the test case design process.

    c. State the advantages of early test case design.

    d. Explain the importance of the Requirement Traceability Matrix in the software quality assurance process.

II. Fill the test cases in the given template referring the below decision table written for transferring money online to an account which is already added and approved.

(T-True, F-False, X- Not Applicable)

ID	CONDITIONS/ACTIONS	TEST CASE 1	TEST CASE 2	TEST CASE 3	TEST CASE 4	TEST CASE 5
Condition 1	Account Already Approved	T	T	T	T	F
Condition 2	OTP (One Time Password) Matched	T	T	F	F	X
Condition 3	Sufficient Money in the Account	T	F	T	F	X
Action 1	Transfer Money	Execute				
Action 2	Show a Message as 'Insufficient Amount'		Execute			
Action 3	Block The Transaction Incase of Suspicious Transaction			Execute	Execute	X

Test case template:

Test Case ID.	Test Case Description	Pre-condition	Test Steps	Expected Results

Q3).

I. Consider the defect report template given below which was used to communicate defect behaviours to the development team by an offshore QA team. Explain the importance of each element which is intentionally left as blank in the template when reporting a defect.

ID	ABCD 0001
Project	ABC Project
Product	Login Screen
Release Version	ABC V 3.3.1
Module	Login
Detected Build Version	01. 02. 03. 05
Summary	
Steps to Replicate	
Actual Result	
Expected Results	
Attachments	
Remarks	
Defect Severity	
Defect Priority	
Reported By	ABC_Nimal
Assigned To	Developer
Status	New

II.

a. Explain the following three defect statuses which are used to decline a defect:

- Duplicate, As designed, Not reproducible

b. A test manager realized that the number of open defects of a Product A is consistent, after a three regression cycles completed with the defect fixes given by the development team. Explain the process that is needed to overcome this type of situations in the early stages of software development life cycle.

Q4).

I.

    a. Consider the following statement on software testing.

        "Too little testing is a crime and too much testing is a sin"

    Do you agree with the above statement? Give reasons.

II.

    a. Why does software quality assurance necessary throughout the software development life cycle?

    b. Explain the difference between *'Software Quality Assurance'* and *'Software Quality Control'*.

    c. Describe the role of *'static testing'* and *'dynamic testing'* in the software development life cycle.

    d. Discuss the benefits of the reviews.

Q5).

I. A producer views the quality of a product in a different angle from the customer who uses that product.

    a. Define the *producer's* view of quality, and the *customer's* view of quality.

    b. Briefly describe the following three categories of costs associated with producing a quality product.

       - Prevention cost

       - Appraisal cost

       - Failure cost

II.

    a. Consider the following statement on external failures.

        'External failure costs can be more devastating…'

    Do you agree with this statement? Justify your answer.

    b. The effectiveness of finding defects by reviewing and testing can be improved by using independent testers. List down four (04) advantages of independent testing.

Q6).

I.

A Quality Assurance Lead of a project has identified a list of risks in his project. The risks are generally classified into two types. Identify their categories and categorize the following risks.

a. The system is to be integrated with a separate system which calculates tax and handles a payment gateway.

b. An open source software which has not been used previously will be used after customizing according to the client's needs.

c. Senior Test Engineer of the project will be on leave for 2 weeks during the test execution.

d. Software will be built using new technologies.

e. Customer deadline is fixed and development team is delaying the "build" for testing due to some delays in the development

II.

a. What are the four (04) stages involved in risk management? Briefly explain them.

b. List down four (04) risks associated with software testing.

III. What are the key areas of Configuration Management procedure?

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