

The Open University of Sri Lanka  
Faculty of Engineering Technology  
Department of Electrical & Computer Engineering



00043

Study Programme	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	: EEI5567/ECI5267 Software Testing and Quality Assurance
Academic Year	: 2019/20
Date	: 26 <sup>th</sup> July 2020
Time	: 0930-1230hrs

### General Instructions

1. Read all instructions carefully before answering the questions.
2. This examination paper has Two Sections: **Section A** has **mandatory** questions and **Section B** has **Optional** Questions.
3. Answer **all questions** in **Section A** and answer **3 Questions** out of **4** in **Section B**
4. This question paper consists **Four (4)** pages.
5. This is a Closed Book Test (**CBT**).
6. Answers should be in clear hand writing.
7. Do not use red colour pen.

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### SECTION A [Answer All Questions]

**Q1.** One of the fields on a form contains a text box that accepts alphanumeric values. Identify the Valid Equivalence class. **[3 Marks]**

- A. BOOK
- B. book.
- C. Boo01k
- D. Book

**Q2.** Enough testing has been performed when:

**[3 Marks]**

- A. time runs out.
- B. the required level of confidence has been achieved.
- C. no more faults are found.
- D. the users won't find any serious faults.

Q3. In a system designed to work out the tax to be paid:

An employee has Rs.40000 of salary tax free. The next Rs.15000 is taxed at 10%,The next Rs. 280000 is taxed at 22%. Any further amount is taxed at 40%. To the nearest whole number, which of these is a valid Boundary Value Analysis test case?

- A. 15000
- B. 320001
- C. 335001
- D. 280000

Q4. When should we run regression tests? Choose TWO Answers.

[4 Marks]

- A. Every week
- B. After the software has changed
- C. As often as possible
- D. When the environment has changed

Q5. \_\_\_\_\_ Testing will be performed by the people at client's own locations

[2 Marks]

- A. Alpha testing
- B. Field testing
- C. Performance testing
- D. System testing

Q6. Which of the following would NOT normally form part of a test plan?

[3 Marks]

- A. Features to be tested
- B. Incident reports
- C. Risks
- D. Schedule

Q7. Write down two positive and two negative test scenarios for following UI

[8 Marks]

The image shows a login form with the following elements:

- A label "Username" above a text input field.
- A label "Password" above a text input field.
- A checkbox labeled "Remember Me".
- A button labeled "Log In".

**Q.8** The characteristic of white box testing and black box testing are mentioned in the box below. Separate them correctly to White box testing or Black box testing. **[14 Marks]**

- It is a way of software testing in which the internal structure or the program or the code is hidden and nothing is known about it.
- It is a way of testing the software in which the tester has knowledge about the internal structure or the code or the program of the software.
- No knowledge of implementation is needed.
- Knowledge of implementation is required.
- It is a structural test of the software.
- It is the behavior testing of the software.
- It is not suitable or preferred for algorithm testing.
- **Example:** search something on google by using keywords.
- It is suitable for algorithm testing.
- **Example:** use inputs to check and verify loops
- **Types of Testing:** Functional Testing, Non-functional testing, Regression Testing
- **Types of Testing:** Path Testing, Loop Testing, Condition testing
- It is also called clear box testing.
- It is also called closed testing.

White Box Testing	Black Box Testing
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## SECTION B

**Essay Questions - Answer 3 Questions out of 4**

**Q9.**

1. List 5 quality attributes. **[5 Marks]**
2. Compare and contrast objective of Testing Vs Debugging **[4 Marks]**
3. List down four risk associates with software testing with examples. **[8 Marks]**
4. What is contingency planning? Describe briefly **[3 Marks]**

**Q10.**

1. What are the 3 main categories of costs associated with software quality? Explain each category with an example. **[9 Marks]**
2. What are the four main types of acceptance testing? **[4 Marks]**

3. Prototypes explore different aspects of an intended design. List down 4 different prototype models.

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[7 Marks]

**Q11.**

1. What is functional testing and give 2 examples for functional testing. [4 Marks]
2. What is non-functional testing and give 2 examples for non-functional testing. [4 Marks]
3. Put the test cases that implement the following test conditions into the **best order for the test execution** schedule, for a test that is **checking modifications of customers on a database**. [12 Marks]
  - A. Print modified customer record
  - B. Change customer address: House number and street name
  - C. Capture and print the on-screen error message
  - D. Change customer address: Postal code
  - E. Confirm existing customer is on the database by opening that record
  - F. Close the customer record and close the database
  - G. Try to add a new customer with no details at all

- Step 1 : Confirm existing customer is on the database by opening that record  
Step 2 : .....  
Step 3 : .....  
Step 4 : .....  
Step 5 : .....  
Step 6 : .....  
Step 7 : .....

**Q12.**

If you take the train before 9:30 AM or in the afternoon after 4:00 PM until 7:30 PM ('rush hour') you must pay full fare. A **saver ticket** is available for trains between 9:30 AM and 4:00 PM, and after 9:30 PM.

[20 Marks]

1. What are the partitions and boundary values to test the train times for these ticket types?
2. Which are valid partitions and which are invalid partitions?
3. What are the boundary values?
4. Derive test cases for the partitions and boundaries.