

**UECS2354 SOFTWARE TESTING
QUIZ – Marking Scheme**

JAN 2020

TUESDAY, 25TH FEB 2020

TIME :7.30 PM – 8.30 PM (1 HOUR)

Answer all questions.

Total: 50 marks

1. (a) Consider the following scenario:
You were assigned to test new version of software that has been maintained for a couple of years. Your regression test does not show any side effects and your manual test did not identified any new defects. What is the testing principle identifiable here? Explain your answer. (3 marks)

Answer:

Pesticide paradox [1 mark]

Explanation: Using the regression test and manual test does not find new defects. This is not enough to find different types of bugs. Thus, new testing techniques should be used to detect new defects. [2 marks]

- (b) List another **TWO** (2) general testing principles. (2 marks)

Answer: any 2 of the following, 1 mark each

1. Testing reveals the presence of bugs
2. Impossibility of exhaustive testing
3. Benefits of early testing
4. Defect clustering (lumpiness of bugs)
5. Testing should adapt to specific needs
6. Absence-of-errors fallacy

2. List **FIVE** (5) important steps in test process. (5 marks)

Answer: 1 mark each

Planning and control

Analysis and design

Implementation and execution

Evaluating test exit criteria and reporting

Test closure activities

3. Determining test scope, risks, objective and strategies are the important activities performed during test planning.

- (a) List another **TWO** (2) activities carried out during test planning. (2 marks)

Answer: any 2 of the following, 1 mark each

1. Determine the test resources
2. Implement test strategies
3. Schedule test analysis and design
4. Schedule implementation, execution and evaluation of tests
5. Determine the test exit criteria

**UECS2354 SOFTWARE TESTING
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JAN 2020

- (b) What is the standard document prepared during this process? (1 mark)

Answer:

Test plan

4. Testers are often seen as the bearer of unwanted news regarding defects. What are the effective ways to improve the communication and relationship between testers and others? (2 marks)

Answer: Any 2 of the following, 1 mark each

- Emphasise goal is to collaborate for better quality
- Communicate neutrally, about facts, without criticism, avoid making people defensive
- Understand your colleagues and how they'll react to your finding
- Confirm your colleagues understood what you said
- Confirm you understand your colleagues
- Communicate factual information in a constructive way
- Try to understand how the other person feels and why they react the way they do

5. Specify the main objective for each of the following testing:

- (a) Unit testing (2 marks)

Answer:

Find bugs, build confidence and reduce risk in the **individual pieces** of the system under test prior to system integration.

- (b) Acceptance testing (2 marks)

Answer:

Demonstrate that the product is **ready for deployment / release** (do not include finding bugs)

6. Consider the following scenario:
An 'Online food ordering system' is currently used by Restaurant ABC to manage their customer's order. Customer can make payment through online banking, credit card or cash on delivery. Since, e-wallet is getting popular in recent year, Restaurant ABC decided to add e-wallet feature in their 'Payment' module. A group of developers are working on the development of this module. You, as the tester is responsible to create test cases and execute them to ensure the module is working as per intended. What types of testing that are involved in the above scenario? (3 marks)

Answer:

Functional
Structural
Regression
Confirmation

UECS2354 SOFTWARE TESTING

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JAN 2020

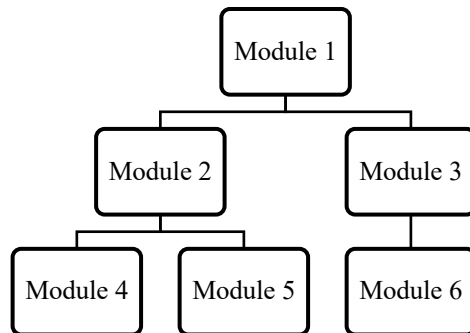
7. Who are the responsible persons for system test and acceptance test? (2 marks)

Answer:

System test: Typically, independent testers, user [1 mark]

Acceptance test: users/customers, might have independent tester to guide the users in testing [1 mark]

8. A system contains 6 modules as shown in the figure below:



Suggest an appropriate integration technique to integrate all the six modules and explain the approach used for your suggestion. (6 marks)

Answer: Any one answer

1. Bottom up [2 mark]

Start with bottom layer modules, use appropriate drivers & test.

Repeat process, replace driver with modules until done. [4 marks]

or

2. Top down [2 mark]

Start with top layer modules, use appropriate stub and test

Repeat process, replace stub with modules until done. [4 marks]

or

3. Backbone Integration Technique [2 mark]

Start with a basic backbone

Test basic functionality, error handling & recovery, reliability & performance

Add the modules that implement the most critical core operations & services

As the last step, test end-to-end through the GUIs on the host system. [4 marks]

or

4. Big Bang integration[2 mark]

Take all tested modules (units / components / classes / functions), put them all together & test [4 marks]

or

5. Functional or transactional [2 mark]

Identify, develop and integrate components required to implement a single function or transaction.

Repeat process, replacing stubs and drivers with set of components to implement next function or transaction. [4 marks]

UECS2354 SOFTWARE TESTING

QUIZ – Marking Scheme

JAN 2020

9. The project manager has assigned Sarah as the moderator to lead the inspection team which reviews the requirement specification document. Sarah is new to the team and has no idea on what is review process and what should be done as a moderator. In order to help Sarah;
- (a) Explain the purpose of inspection process and why it is different from other review processes. (3 marks)

Answer:

Purpose: to find almost all of the defects (as much as 90%) [1 mark]

Difference: any 2 of the following, 1 mark each

- Formal process – consist of rules, checklist, entry and exit criteria, and include gathering defect removal metrics
- Pre-meeting is mandatory
- Inspection report is mandatory
- Each member in inspection team has defined roles and responsibilities
- Special trained reader might be used

- (b) Explain the responsibility of a moderator. (1 mark)

Answer:

Moderator is to lead the review meeting, in inspection moderator cannot be the author. A trained moderator is required for inspection process.

- (c) List all the **SIX** (6) generic review processes. (6 marks)

Answer: 1 mark each

1. Planning
 1. Define review criteria, select the personnel, allocate roles, define entry and exit criteria, select what to review and when to review
2. Kick-off
 1. Distribute documents and explain the objectives, process and documents to the participants
3. Individual preparation
 1. Prepare for the review meeting by reviewing the documents and noting potential defects, questions and comments
 2. 1-2 hours alone
4. Review meeting
 1. Activities include discussing and logging the results or minutes, noting defects, making recommendations to handle defects, making decisions about the defects and examining, evaluating and recording issues during meetings or tracking any group electronic communications
 2. 1-2 hours together
5. Rework / repair: done by the author
 1. Fix defects, record updated status of defects
6. Follow-up
 1. Check that defects have been addressed, gather metrics and check on exit criteria
 2. Also include overall process improvement analysis, evaluation of bug removal at phase exit review

UECS2354 SOFTWARE TESTING

QUIZ – Marking Scheme

JAN 2020

10. The requirements for a photo printing kiosk are given below. Identify and list at least **TEN** (10) findings that are ambiguous or to be clarified. (10 marks)

1. A client inserts a media into the kiosk and selects folders containing photo(s) that should be printed.
2. Photo Kiosk scans the content of selected folder(s) and displays thumbnails of all found photo(s).
3. The client selects photo(s) and specifies order details such as print format, paper type, crop mode, etc.
4. User can edit (cropped, rotated, flipped, etc.) the photo(s) if necessary.
5. User can add design to the photo(s). User can choose designs from the available design templates.
6. Once user confirmed with the editing, user can proceed to make payment.
7. The payment screen will display the charges details based on the selected paper quality, design applied and quantity.
8. Payment can be made by cash or card (debit or credit).
9. Once payment is successful, the ordered photos can be printed immediately.
10. Lastly, Photo Kiosk prints a receipt containing the payment details.

Answer: samples but not limited to.

1. What would be the media format?
How client connect to the kiosk? Through Phone? USB? Pen Drive?
Folder will be selected automatically?
Folder selection based on what criteria?
What if it is unacceptable media?
2. What is the acceptable format of the photo?
What if there are unsupported photo format?
Thumbnails shows in page or multiple page?
Thumbnails shows with pic icon? Or what is the icon?
3. Client can select multiple photos?
Order detail has more selections?
What are the print formats listed?
What are the paper types available?
What are the crop modes?
Client can select all or only one?
4. User can edit photos one by one or multiple?
Can perform all the action or only action is allowed per photo?
5. How many design template available?
Can apply multiple design to one photo?
7. Payment for cash, can accept note, coin?
What if the coin/note is not valid/unacceptable?
Payment for credit card, what if user enter wrong information?
Will kiosk store the details of credit card? Privacy and security issue?

(or any other appropriate consideration)