

CONFIDENTIAL



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2017/2018**

COURSE NAME : SOFTWARE QUALITY ASSURANCE
COURSE CODE : BIE 30703
PROGRAMME CODE : BIP
EXAMINATION DATE : JUNE / JULY 2018
DURATION : 3 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

TERBUKA

THIS QUESTION PAPER CONSISTS OF NINE (9) PAGES

CONFIDENTIAL

Q1 Which of the following is **MOST** characteristics of specification based (black-box) techniques?

- A. Test cases can be easily automated.
- B. Test cases are independent of each other.
- C. Test cases are derived systematically from delivered code.
- D. Test cases are derived systematically from models of the system.

(2 marks)

Q2 Which of the following statement are **TRUE**?

- i. An incident may be closed without being fixed.
- ii. Incidents may not be raised against documentation.
- iii. The final stage of incident tracking is fixing.
- iv. The incident record does not include information on test environments.
- v. Incidents should be raised when someone other than the author of the software performs the test.

- A. ii and v.
- B. i and v.
- C. i, iv and v.
- D. i and ii.

(2 marks)

Q3 Which types of tools would typically be used by developers and independent test team?

- i. Static analysis
- ii. Performance testing
- iii. Test management
- iv. Dynamic analysis
- v. Test running
- vi. Test data preparation

- A. Developer would typically use i,iv and vi ; test team ii, iii and v.
- B. Developer would typically use i and vi ; test team ii, iii, vi and v.
- C. Developer would typically use i,ii, iii and iv ; test team v and vi.
- D. Developer would typically use i,iii, iv and vi ; test team ii and v.

(2 marks)



Q4 Test Manager should NOT

- A. report on deviations from the project plan.
- B. sign the system off to release.
- C. re-allocate resource to meet original plans.
- D. provide information for risk analysis and quality improvement.

(2 marks)

Q5 Which of the following is a KEY task of a tester?

- A. Reviewing test developed by others.
- B. Writing a test strategy for project.
- C. Deciding what should be automated.
- D. Writing test summary reports.

(2 marks)

Q6 How many statement and branch coverage are needed to test the following code in **Figure Q6**.

```
If A>B
    THEN C = A-B
ELSE
    C = A + B
ENDIF

READ D
IF C =D
    THEN PRINT "ERROR"
ENDIF
```

Figure Q6

- A. 1 test for statement coverage, 3 for branch coverage.
- B. 2 test for statement coverage, 2 for branch coverage.
- C. 2 test for statement coverage, 3 for branch coverage.
- D. 3 test for statement coverage, 2 for branch coverage.

(2 marks)

TERBUKA

Q7 Which of the following test cases and expected results are **VALID** based on Decision Table in **Figure Q7**?

Condition	Rule1	Rule2	Rule3	Rule4
Age	<21yrs	21-29yrs	30-50yrs	>50yrs
Insurance Class	A	A or B	B, C or D	C or D
Actions				
Premium	100	90	70	70
Excess	2500	2500	500	1000

Figure Q7

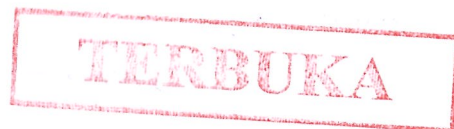
- A. 23 year old in insurance class A Premium is 90 and excess is 2500.
 - B. 51 years old in insurance class C Premium is 70 and excess is 500.
 - C. 31 years old in insurance class B Premium is 90 and excess is 2500.
 - D. 43 years old in insurance class C Premium is 70 and excess is 1000.
- (2 marks)

Q8 Which of the following would be categorized as project risks?

- A. Skill and staff shortages.
 - B. Poor software characteristics.
 - C. Failure-prone software delivered.
 - D. Possible reliability defect (bug).
- (2 marks)

Q9 When should configuration management procedures be implemented?

- A. During tests planning.
 - B. During test analysis.
 - C. During test execution.
 - D. When evaluating exit criteria.
- (2 marks)



Q10 Which **ONE** is the success factor when deploying a new tool in an organization?

- A. Providing coaching to users and defining usage guidelines.
- B. Monitoring tool usage and reducing the need for risk analysis.
- C. Improving processes and focusing more on component testing.
- D. Assessing testing completion and minimizing code reviews.

(2 marks)

Q11 A test plan is written specifically to describe a level of testing where the primary goal is establishing confidence in the system. Which **ONE** is the best name for this document?

- A. Master test plan.
- B. System test plan.
- C. Acceptance test plan.
- D. Project plan.

(2 marks)

Q12 Which of the following details would most likely be included in an incident report?

- i. Identification of the test item (configuration item) and environment.
- ii. Development process characteristics such as organization stability and test process used.
- iii. A review of the test basis, such as requirements, architecture, design and interfaces.
- iv. Scope or degree of the impact on the stakeholders' interest.

- A. i,ii and iii.
- B. i,ii and iv.
- C. i and iv.
- D. ii and iv.

(2 marks)

TERBUKA

Q13 Select **FOUR (4)** recommended principles from the following list for introducing a chosen test tool in an organization.

- i. Roll the tool out to the entire organization at the same time.
- ii. Start with a pilot project.
- iii. Adapt and improve processes to fit the use of the tool.
- iv. Provide training and coaching for new users.
- v. Let each team decide their own standard ways of using the tool.
- vi. Monitor that costs do not exceed initial acquisition cost.
- vii. Gather lessons learned from all teams.

- A. i, ii, iii and v.
- B. i, iv, vi and vii.
- C. ii, iii, iv and vii.
- D. iii, iv, vi and vii.

(2 marks)

Q14 Which of the following statements is **CORRECT** related to the decision coverage goal in **Figure Q14**?

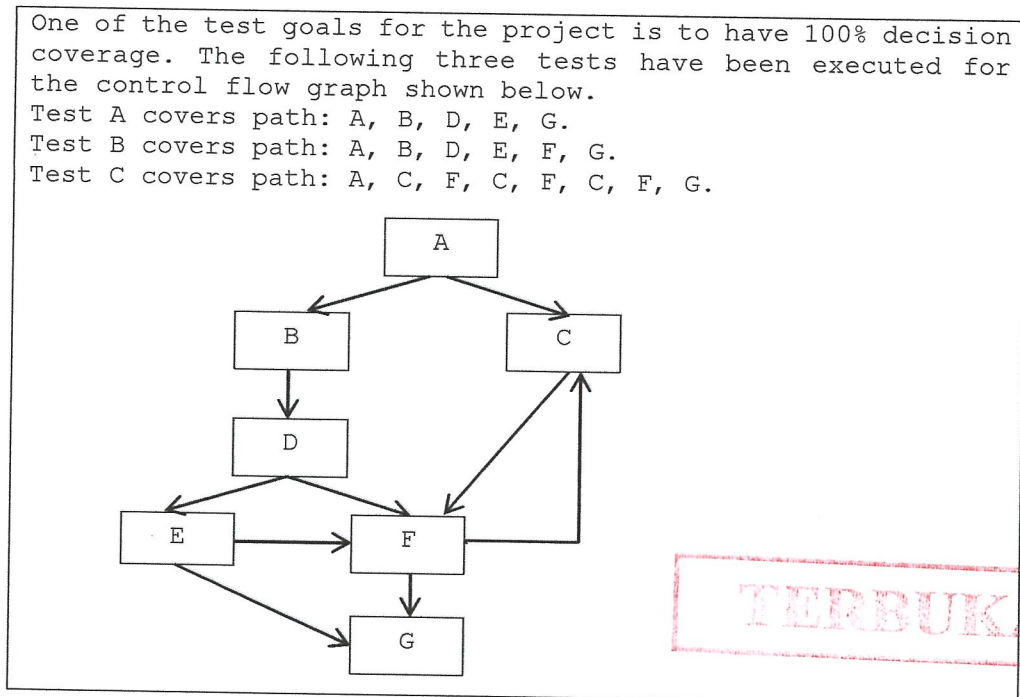


Figure Q14

- A. Decision D has not been tested completely.
- B. 100% decision coverage has been achieved.
- C. Decision E has not been tested completely.
- D. Decision F has not been tested completely.

(2 marks)

Q15 Which of the following statements are **FALSE** about the benefits of deriving test cases from use cases?

- i. Deriving test cases from use cases is helpful only for automated testing.
 - ii. Deriving test cases from use cases is helpful for system and acceptance testing.
 - iii. Deriving test cases from use cases is helpful for testing the interaction between different components of the system.
 - iv. Deriving test cases from use cases is helpful for component testing.
- A. i,ii and iii
 - B. i,ii and iv
 - C. i and iv
 - D. ii and iv

(2 marks)

TERBUKA

- Q16** (a) Determine equivalence classes for the following scenarios:
- (i) Paying with credit cards shall be possible with Visa, Master and Amex cards only. (5 marks)
 - (ii) An integer field shall contain values from and including 1 to and including 15. (5 marks)
- (b) Determine test conditions required for the following scenarios using boundary analysis technique:
- (i) A program validates a numeric field as follows: values less than 10 are rejected, values between 10 and 21 are accepted, values greater than or equal to 22 are rejected. (5 marks)
 - (ii) Password should have minimum one special character and minimum one upper case letter. (5 marks)
- (c) Determine test conditions for the following scenario using decision table.
- (i) Home page is displayed only when both the "User ID" and "Password" are entered correct. Otherwise a message "Invalid User Credentials" is displayed. (10 marks)



Q17 Questions **Q17(a)** – **Q17(c)** are based on the scenario in **Figure Q17**.

```
While(width != length)
  If (width > length) then
    width = width - length
  else
    length = length - width
  End if
End while
```

Figure Q17

- (a) Develop a flow graph. (15 marks)
- (b) Calculate the maximum number of test cases needed to provide statement coverage. For each test case, give **TWO (2)** examples set of input. (5 marks)
- (c) Calculate the maximum number of test cases needed to provide branch condition coverage. For each test case, give **THREE (3)** examples set of input. (10 marks)

TERBUKA

- END OF QUESTION -