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**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2013/2014**

COURSE NAME : SOFTWARE QUALITY  
ASSURANCE  
COURSE CODE : BIE 30703  
PROGRAMME : 3 BIE  
EXAMINATION DATE : JUNE 2014  
DURATION : 2 HOURS AND 30 MINUTES  
INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

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**SECTION A**

- Q1**
- (a) Define the review process based on IEEE (1990) standard. (4 marks)
  - (b) Explain **THREE (3)** contributions of expert opinions to support quality assessment efforts in review tasks. (6 marks)
  - (c) Compare the participants and processes involved in inspection and walkthrough in review methodology. (10 marks)
- Q2**
- (a) Describe the following statements:
    - (i) Relationship between testing and quality. (4 marks)
    - (ii) Black box testing and White box testing. (6 marks)
  - (b) Define **ONE (1)** objective of testing for each acceptance level and system operating level. (4 marks)
  - (c) Classify each of the following scenario with an appropriate testing principle.
    - (i) You are testing a product and have found 100 defects. Two-thirds of those defects are in the user interface and the access control modules, while the remaining 33 defects are spread across six other modules. (2 marks)
    - (ii) You are running a written test which other testers have run previously. In addition, this test has found bugs previously, and those bugs have been confirmed to be fixed. The test manager has encouraged you to vary the specific way in which you run the test. (2 marks)

- (iii) A small number of modules usually contains most of the defects discovered during pre-release testing, or is responsible for most of the operational failures.  
(2 marks)

**Q3** Consider the following scenario.

As an SQA unit member, you are required to prepare the first draft of a new procedure.

Propose **FOUR (4)** sources of information which might be used to prepare the procedure draft.

(8 marks)

**SECTION B**

**Q4** Question **Q4(a)** and **Q4(b)** are based on the given case study.

You are testing an e-commerce system and conducting the following test work descriptions:

1. One area of interest is the ability to charge a purchase to support credit cards during the check out process.
2. You obtain a list of all supported credit cards.
3. You document the actions to take when testing the check out process.

(a) Identify the test specification terminology based on IEEE STD 829-1998 for each test work description above. (3 marks)

(b) Construct only **ONE (1)** test specification draft of the test work identified in **Q4(a)** by including the appropriate sections. (8 marks)

**Q5** Questions **Q5(a)** and **Q5(b)** are based on the given case study.

You are testing a credit-card only, unattended gasoline pump. Once the credit card is validated, the customer has selected the desired grade, and the pump is ready to pump, the customer may cancel the transaction and owe nothing. Once the pumping starts, gasoline will be sold in hundredths (0.01) of a gallon. The pump continues to pump gasoline until the user stops or a maximum of 50.00 gallons has been dispensed.

(a) Apply boundary value analysis to the related variable to determine the boundary values. Show your work with appropriate illustration. (3 marks)

(b) Give **ONE (1)** example for each invalid-too low, valid and invalid-too high value derived from **Q5 (a)**. (3 marks)

(c) Produce a set of input values if equivalence partition applied for the above variable. (3 marks)

**Q6** Questions **Q6(a)** and **Q6(b)** are based on the given case study.

*Money-Money*, a software package for financial management of medium-to-small businesses developed by Penny-Penny Ltd, captured a substantial share of the market. The Penny-Penny help desk (HD) has gained a reputation for its high level of professional service to customers who use the software package. During the third and fourth quarters of 2002, the company invested substantial efforts in preparing an improved user manual. Its distribution to customers was completed during December 2002 as shown in Table 1.

**Table 1:** HD activities for the first quarters of 2002 and 2003

Data	Code	1st Quarter 2002	1st Quarter 2003
Number of customers	A	305	485
Total number of calls received during the quarter	B	2114	2231
Number of HD calls requiring visit to customer's site	C	318	98
Average time for customer calls served by phone (in minutes)	D	9.3	8.8
Average time for customer calls served by visits to customer's site (in minutes)	E	95	118
Number of customer complaints	F	38	41

Analyze **THREE (3)** quality metrics with its calculation formula for the HD services, based on the HD data in **Table 1**.

(12 marks)

**-END OF QUESTIONS-**