UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2022/2023

COURSE NAME   :   SOFTWARE TESTING

COURSE CODE   :   BIE 30803

PROGRAMME CODE   :   BIP

EXAMINATION DATE   :   FEBRUARY 2023

DURATION   :   3 HOURS

INSTRUCTION   :   1. ANSWER ALL QUESTIONS.

                         2. THIS FINAL EXAMINATION IS CONDUCTED VIA **CLOSED BOOK.**

                         3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK.

TERBUKA

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

Q1   Answer **Q1(a)** - **Q1(d)** based on **Figure Q1**.

```
1    printf ("Please enter two numbers one or two digits");
2    scanf ("%d %d", &num1, &num2);
3
4    if (num1>=0 && num2<=99){
5        printf ("The numbers are %d and %d", num1,num2)
6        total=num1+num2
7        printf("Total %d",total);
8    }
9    else
10   {
11       printf ("Please enter two numbers one or two digits");
12       scanf ("%d %d", &num1, &num2);
13
14   }|
```

Figure Q1

(a)   Derive a control flow graph.

(5 marks)

(b)   List all independent paths based on the answer in **Q1(a)**.

(5 marks)

(c)   List test case(s) needed to provide statement coverage. For each test case, state the paths.

(5 marks)

(d)   List test case(s) needed to provide decision coverage. For each test case, state the paths.

(5 marks)

Q2   Determine test conditions required using boundary analysis technique and equivalence classes for the following scenarios.

(a)   Only 18-years-old born between January 1 and August 31, 2004 are automatically registered and eligible to vote in the 15th General Election.

(10 marks)

(b)   Degree and Diploma classes awarded are dependent on achievement final Cumulative Grade Point Average (CGPA) as follows;
           CGPA ≥ 3.70: First class honor
           3.00 ≤ CGPA < 3.70: Second class (upper)
           2.30 ≤ CGPA < 3.00: Second class (lower)
           2.00 ≤ CGPA < 2.30: Third class

(10 marks)

2

Q3   Determine test conditions for the buyer and seller from West Malaysia (WM) in the scenario in **Figure Q3** using decision table.

Shopee RM15 Free Shipping Program sellers will enjoy the following shipping fee subsidies.

SHIPPING CHANNEL	SELLER LOCATION	BUYER LOCATION	SHIPPING SUBSIDY
Standard Delivery	West Malaysia (WM)	West Malaysia (WM)	RM3.00
		Sabah, Sarawak & Labuan (EM)	RM8.00
	Sabah, Sarawak & Labuan (EM)	West Malaysia (WM)	RM8.00
		Sabah, Sarawak & Labuan (EM)	
	Overseas	West Malaysia (WM)	RM3.00
		Sabah, Sarawak & Labuan (EM)	RM8.00
Economy Delivery (Sea Shipping)	Overseas	West Malaysia (WM)	RM3.00
	West Malaysia (WM)	Sabah, Sarawak & Labuan (EM)	RM8.00

Source: https://seller.shopee.com.my/edu/article/1095

Figure Q3

(20 marks)

Q4   (a)   Define independent testing.

(2 marks)

(b)   Describe **TWO (2)** advantages of independent test.

(4 marks)

(c)   Describe **TWO (2)** disadvantages of independent test.

(4 marks)

(d)   Describe **FIVE (5)** tester soft skills to overcome the challenges in **Figure Q4**.

Software testers are the middlemen between the development team and the customers. The tester is also responsible for communicating with customers to understand their requirements. He needs to handle pressure from both sides. It is somewhat common to change project requirements in agile development projects. There are also an endless number of areas that can be tested.

Figure Q4

(10 marks)

Q5   (a)   Discuss **TWO (2)** potential risks in using tools to support testing.

(4 marks)

(b)   Suggest a type of support tool for testing based on the following scenario.

(i)   Your development team decided to adopt the test-driven development approach. A test function to test each function must be developed prior to the function itself.

(2 marks)

(ii)   Your company has been awarded with a business contract to manage the testing activity of an online stock market system. Your team main tasks are to handle various types of defects in the system.

(2 marks)

(iii)   The presence of this tool allows you, as the development team leader to check for the consistency of the use cases against the user needs.

(2 marks)

-END OF QUESTIONS –

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