



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2021/2022**

COURSE NAME : COMPUTER PROGRAMMING

COURSE CODE : BIT 10303

PROGRAMME CODE : BIT

EXAMINATION DATE : JULY 2022

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.

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

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**Q1** Universe Petrol company wants you to write a program for customer fueling. The program will display a menu to select the types of petrol and how many whole liters they wish to purchase; it then calculates the total cost of filling up their vehicle and displays it on the output screen. The fuel options and tariffs at this petrol station are tabulated in **Table Q1**. If the customer enters the wrong input, it will display a message “Wrong input!”. Write a program by using `switch..case` statement. Refer to **Figure Q1** for the example of the output.

**Table Q1**

Fuel Type	Tariff
RON 95	RM 1.84 per liter
RON 97	RM 2.14 per liter
Diesel	RM 2.02 per liter

```

1.      RON 95  RM 1.84 per liter
2.      RON 97  RM 2.14 per liter
3.      Diesel  RM 2.02 per liter

What fuel do you need? (1 - 3)      : 2
How many liters of fuel do you need : 30.5
The Total Cost                      : RM 65.27

```

**Figure Q1**

(16 marks)

**Q2** Answer **Q2 (a)** to **Q2 (b)** based on the statement in **Figure Q2 (a)**.

The positivity rate of Covid-19 tests conducted in Malaysia from 1<sup>st</sup> April 2022 until 18<sup>th</sup> April 2022 are 14.3, 13.9, 14.0, 14.1, 14.2, 14.1, 13.5, 13.5, 13.1, 12.7, 12.9, 12.9, 13.0, 13.2, 12.5, 12.7, 12.9 and 13.1.

**Figure Q2 (a)**

(a) Write a C code segment to initialize an array based on the data provided in **Figure Q2 (a)**.

(2 marks)

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- (b) Write a C code segment to prompt a user to enter that permits interaction with the user as shown in **Figure Q2 (b)**.

```
Enter a number of the day : 18
The positivity rate is 13.10
```

Figure Q2 (b)

(4 marks)

- Q3 Write a complete C program to prints the full pyramid of asterisk (\*) as shown in the **Figure Q3**. The program is organized into several functions as follows:

- `main()` - prompts and asks user to enter the number of rows in the pyramid to be printed, then call the `checkUserInput(row)` function. If the function of `checkUserInput(row)` returns 0 value, displays the output "Wrong input!" else asks user to enter the total number of pyramid need to be printed. For example, the user enters number 2, then calls the function `printPyramid(numRows)` twice and prints the pyramid with specified number of rows.
- `checkUserInput(row)` - this function receives the total number of rows in the pyramid and checks that the user enters odd number in the range of 1 to 15. If user enters odd number in the range of 1 to 15, this function returns the value entered by user. Otherwise, this function returns 0 value.
- `printPyramid (numRows)` - prints the pyramid with the received number of rows from the `main()` function as shown in **Figure Q3**.

```
Enter the number of rows (1 to 15): 7
Enter the total number of pyramid: 2

      *
     ***
    *****
   *       *
  ***     ***
 *****
*         *
*       *
 *     *
  *   *
   **
  ***
 *****
  ***
 *     *
**
***
****
*****
```

Figure Q3

(32 marks)

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**Q4** Assume that you are working on a program to process games of football teams and collect their points. All of the games results that consist of team name, games played, wins, draw and lose need to be entered into the program. The program will calculate and display the points given based on the number of wins and draw with a 3 point for win and 1 point for draw. Answer **Q4 (a)** and **Q4 (b)** based on **Figure Q4**.

```

Enter team name      : JDT
Enter games played   : 22
Enter games win      : 11
Enter games draw     : 7
Enter games lose     : 4

:::::::::: Football Team Details ::::::::::

Team Name           : JDT
Games Played        : 22
Games Win           : 11
Games Draw          : 7
Games Lose          : 4
Team Points         : 40
    
```

**Figure Q4**

- (a) Define a structure of football teams containing the details such as teamName, gamesPlayed, win, draw, lose and points. (6 marks)
  
- (b) Based on the answer in **Q4 (a)**, write a program that accepts from a user and displays the football team details using structure with pointer. (20 marks)

**- END OF QUESTIONS -**

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