



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION SEMESTER II SESSION 2022/2023

COURSE NAME : ALGORITHM AND PROGRAMMING

COURSE CODE : BIC 10204

PROGRAMME CODE : BIP / BIS / BIW / BIM

EXAMINATION DATE : JULY / AUGUST 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.

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

TERBUKA

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Q1 Based on **Figure Q1(a)** and **Figure Q1(b)**

T-Shirt Size Chart				
Size	S	M	L	XL
Chest Width	19"	20"	21"	22"
Shoulder Width	16"	17"	18"	18.5"
Sleeve Length	6.5"	7"	7.5"	8"
T-Shirt Length	26.5"	27.5"	28.5"	29.5"

Figure Q1(a)

```

Application for T-Shirt Size
=====
Enter Chest Width (inches) : 20.55
Enter Shoulder Width (inches) : 17.30
Enter Sleeve Length (inches) : 7.00
Enter T-Shirt Length (inches) : 27.50
Your T-Shirt Size is : M
    
```

Figure Q1(b)

- (a) Draw a flow chart to solve the problem. (5 marks)

- (b) Write a complete interactive C program using if ... else statement for users to input a chest width, shoulder width, sleeve length, and T-shirt length. The user will have their t-shirt size according to **Figure Q1(a)**. (15 marks)

Q2 Answer the following questions based on the given case study.

Calculation of mileage reimbursement for staff in a company at a rate of RM0.70 per kilometer.

(a) Write a pseudo-code to perform the calculation.

(5 marks)

(b) Write a complete C program that permits interaction with the user in this manner.

```
Enter beginning odometer reading => 1200.7
Enter ending odometer =>1595.4
You have traveled 394.7.
Your total reimbursement is 276.29
```

(15 marks)

Q3 Write a C program using a function that will display the calculator menu. The program will prompt the user to choose the operation (each operation has its own function (receive and return function definition) and `switch...case` function should be used for multiple selection procedures). The program will then ask the users to input two integers for the calculation.

```
MENU
1. Add
2. Subtract
3. Multiply
4. Divide
5. Modulus

Enter your choice: 3
Enter your two numbers: 7 11
Result: 77

Continue? y
```

Figure Q3

(20 marks)

Q4 Identify a name for each label in **Figure Q4**.

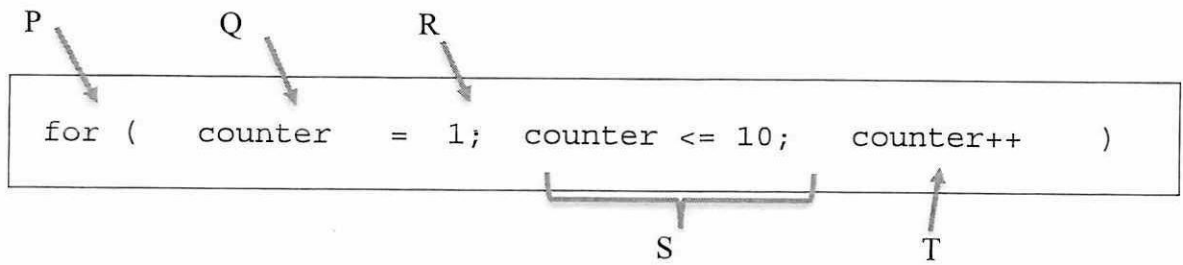


Figure Q4

(10 marks)

Q5 Write a function in C that reads 5 numbers from the console. The function should return the average of those numbers. Show how the function can be called from the main function.

(15 marks)

Q6 Based on **Figure Q6**, write a complete C program using array implementation to display the grand total of chocolate production of Chocklate Shoshedap Factory for the given month.

Week	Dark Chocolate (kg)	White Chocolate (kg)	Tiramisu (kg)
1	55	30	105
2	30	85	75
3	135	103	61
4	215	150	173

Figure Q6

(15 marks)

-END OF QUESTIONS -