UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2022/2023

COURSE NAME	:	COMPUTER PROGRAMMING
COURSE CODE	:	BIT 10303
PROGRAMME CODE	:	BIT
EXAMINATION DATE	:	FEBRUARI 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.

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THIS QUESTION PAPER CONSISTS OF **SIX (6)** PAGES

Q1   Write a complete C program that uses **TWO (2)** functions named as square and cube using for loop to calculate the squares and cubes of the integers from 1 to 10. Output should be displayed as **Figure Q1**.

```
Square number:1 4 9 16 25 36 49 64 81 100
Cube number:1 8 27 64 125 216 343 512 729 1000
```

Figure Q1

(8 marks)

Q2   Write a complete interactive C program using `if … else` statement, to ask the user to input height and weight of a candidate for military admission application. The candidate acceptance according to the given requirement:

- Height
    - Men's minimum height: 1.62m
    - Women's minimum height: 1.57m
- Weight
    - Men's minimum weight:47.5kg
    - Women's minimum weight:45kg
- Body Mass Index (BMI):
    - Body Mass Index for Men and Women not exceeding 26.0
      `BMI = weight / (height*height)`

The output should be displayed as **Figure Q2(a)** for pass application and **Figure Q2(b)** for fail application.

```
Application For Military Admission
=======================================
==Gender==
1.Male
2.Female

Select gender :
1
Enter height (meter) :1.65
Enter weight (kg):50
Congratulations, you passed the selection
```

Figure Q2(a)

```
Application For Military Admission
=======================================
==Gender==
1.Male
2.Female

Select gender :
1
Enter height (meter) :1.61
Enter weight (kg):47.5
Sorry, you didn't pass the selection
```

Figure Q2(b)

(10 marks)

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Q3   Write a complete interactive C program that performs calculator operation by allowing user to enter **TWO (2)** numbers. The functions in **Table Q3** must be created:

Table Q3

Function name	Operation
add()	To perform addition
subtract()	To perform subtraction
multiply()	To perform multiplication
divide()	To perform division
display()	To print the result

The choice of add(), subtract(), multiply(), divide() and display() need to be implemented using switch...case statement. Output should be displayed as **Figure Q3(a)** for valid input and **Figure Q3(b)** for invalid input by user.

```
Enter two numbers: 2
3

****************
1.Addition
2.Subtraction
3.Multiplication
4.Division
Enter your choice: 4
2.00 / 3.00 = 0.67

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

Figure Q3(a)

```
Enter two numbers: kk

****************
1.Addition
2.Subtraction
3.Multiplication
4.Division
Enter your choice: Invalid input.Please enter correct input.
************************************
```

Figure Q3(b)

(22 marks)

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Q4   Based on **Figure Q4**, answers **Q4(a) – Q4(f)**.

```
The CP Communication Technology sells five (5) different version of smart
phone namely as V 1, V 2, V 3, V4 and V 5. The supervisor needs to keep
daily sales of each type of version and total daily sales using the
program that you are asked to develop. In your program should able read
the sales for each type of version, display the sales for each type of
version and calculate the total daily sales for 5 version of smart phone
with two floating numbers.

Here is an example of an output:

DAYLY SALES FOR 5 VERSION OF SMART PHONE

--Input Sales of VERSIONS---

Version 1 >> 250.50 //supervisor will input the total sales for each
Version 2 >> 100.70 //version of smart phone
Version 3 >> 350.50
Version 4 >> 400.30
Version 5 >> 180.00

--Display Sales FOR 5 VERSION OF SMART PHONE --
Sales of each Version of Smart Phone

Sales for Version 1: 250.50
Sales for Version 2: 100.70
Sales for Version 3: 350.50
Sales for Version 4: 400.30
Sales for Version 5: 180.00

Total Daily Sales : RM 1282.00
```

Figure Q4

(a)   Declare an array called ver to keep the information for versions sales by CP
       Communication Technolgy.

(2 marks)

(b)   Write a program segment to read daily sale of all version by using for loop into
       array declared in **Q4(a)**. Your program segment should ask user to enter the input.

(6 marks)

(c)   Write a program segment to display the information entered in **Q4(b)**.

(4 marks)

(d)   Write a program segment calculate total daily sales based on information
       entered in **Q4(b)**.

(4 marks)

(e)   Write a program segment display the total daily sales calculated in **Q3(e)**.

(2 marks)

(f)   Write a complete program.

(2 marks)

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Q5   Based on **Figure Q5** answer the questions **Q5(a)** and **Q5(b)**. Assume the address of variables p1, p2, ptr1 and ptr2 are 3000, 3002, 3004, 3006.

```c
#include <stdio.h>

int main(){

    //Part A
    float p1 =25, p2=50;
    float *ptr1, *ptr2;

    ptr1 = &p1;
    ptr2 = &p2;
    //END of Part A

    printf("p1 = %f, p2 = %f\n", p1, p2);
    printf("*ptr1 = %f, *ptr2 = %f\n", *ptr1, *ptr2);

    //Part B
    *ptr2 = *ptr1;
    //END of Part B

    printf("*ptr1 = %f, *ptr2 = %f\n", *ptr1, *ptr2);

    //Part C
    ptr1 = ptr2;
    //End of Part C

    printf("*ptr1 = %f, *ptr2 = %f\n", *ptr1, *ptr2);
}
```

Figure Q5

(a)   Illustrate the memory after execution of

    (i)   PART A.

(6 marks)

    (ii)   PART B.

(2 marks)

    (iii)   PART C.

(2 marks)

(b) Write the program output.

(2 marks)

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```
#include <stdio.h>

int main()
{
        int age,count;
        float cgpa;
        char name[30];
        FILE *fRead;

        fRead=fopen("Input.txt","r");

        for (count=0;count<3;count++){


                        X


        } }
```

Figure Q5(b)(i)

```
input - Notepad              —     □     ×
File   Edit   Format   View   Help
Aman
22
3.77
Benjamin
19
2.81
Cintha
20
3.56
```
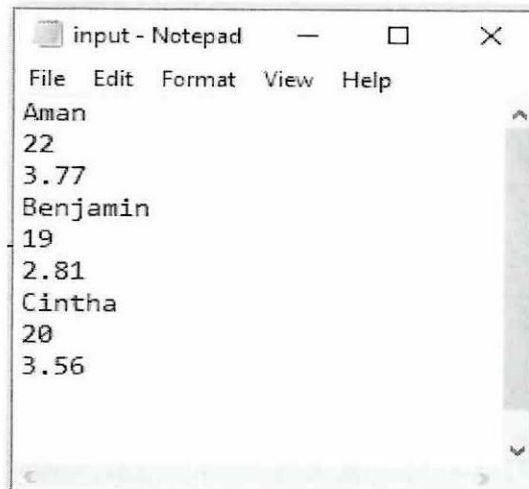
Figure Q5(b)(ii)

(b)   Based on **Figure Q5(b)(i)** and **Q5(b)(ii)** answer the question **Q5(b)(i)** and **Q5(b)(ii)**.

(i)   Write a program segment for label **x** to read and display the data from Input.txt. on output screen.

(5 marks)

(ii)   Write the program output

(3 marks)

-END OF QUESTIONS –