UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2022/2023

COURSE NAME	:	COMPUTER PROGRAMMING
COURSE CODE	:	BIT 10303
PROGRAMME CODE	:	BIT
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 QUESTION PAPER CONSISTS OF **FIVE (5)** PAGES

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Q1 (a)   Answer **Q1(a)(i) – Q1(a)(iii)** base on **Figure Q1(a)**.

```
1.    #include <stdio.h>
2.
3.    void print(int);
4.    void newLine();
5.
6.    int main()
7.    {
8.          int a, b, c;
9.          a=2; b=0; c=3;
10.         print(a);print(b);print(c);newLine();
11.   }
12.   void print(int n){
13.         printf("%d",n);
14.   }
15.   void newLine(){
16.         printf("\n");
17.   }
```

Figure Q1(a)

(i)   What are the program outputs?

(2 mark)

(ii)   If line 10 in the program is being modified to print(b);
newLine(); print (a); print(c); what will be the
output ?

(2 mark)

(iii) Modify line 10 in the program to obtain the following output
as follow:

```
2022
2023
```

(6 marks)

(b)   Write a program for function min that receives two integer values as parameters and
returns the minimum number between the two values.

(10 marks)

Q2   Write a complete program by using array to read expenses in a year. Your program able to
prompt user to enter the expenses for each month. Then, by using for loop, calculate and
display the total expenses each quarter of the year. Output should be display as in **Figure
Q2**.

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Figure Q2

(20 marks)

Q3   According to structure in **Figure Q3(a)**, write a complete program to calculate and display the area and volume of **THREE** (3) cylinder. Your program able to prompt user to enter the value of radius and height. Output should be display as in **Figure Q3(b)**.
($area=2*\pi*radius*height+2*\pi*radius^2$, $volume=\pi*radius^2*height$, $\pi=3.14$).

```
struct coord{
      float height;
      float radius;
};
```

Figure Q3(a)

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```
Input for Cylinder 1

Enter height >> 10
Enter radius >> 1

Input for Cylinder 2

Enter height >> 20
Enter radius >> 2

Input for Cylinder 3

Enter height >> 30
Enter radius >> 3

Output for Cylinder 1
Area of Cylinder 1 = 69.08
Volume of Cylinder 1 = 31.40

Output for Cylinder 2
Area of Cylinder 2 = 276.32
Volume of Cylinder 2 = 251.20

Output for Cylinder 3
Area of Cylinder 3 = 621.72
Volume of Cylinder 3 = 847.80
```

Figure Q3(b)

(20 marks)

Q4   Based on **Figure Q4(a)**, you are required to develop a complete C program as output in **Figure Q4(b)**.

```
Case Study:

Prog C Sdn Bhd currently is planning to deploy a system that enable
user to online pay for insurance company from multiple Motor and
Life Insurance Company. The list of identified company that agreed
to join this venture are listed in the Table Q4. By using this
system, user will entitled for a discount. However, the discount
are varies based on the company name. List of discount also can be
seen from Table 1. You are free to include any decision, looping,
calculation, input and output as long as it meets the required
requirements mentioned above.
```

Figure Q4(a)

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Table Q4: List of insurance company and discounts

Insurance type	Company	Discount (%)
1. Motor	1.Kurnia	3
	2.Tokio	2
2. Life	1.Prudential	7
	2.Etiqa	5
	3.AIA	3

```
Welcome to Online Pay Insurance

Enter amount to pay >> 1000.00
Enter Insurance type (1-Motor, 2-Life) >> 1
Enter Company name (1-Kurnia, 2-Tokio) >> 1

Total to Pay = 970.00


Welcome to Online Pay Insurance

Enter amount to pay >> 2000.00
Enter Insurance type (1-Motor, 2-Life) >> 1
Enter Company name (1-Kurnia, 2-Tokio) >> 2

Total to Pay = 1960.00


Welcome to Online Pay Insurance

Enter amount to pay >> 2000.00
Enter Insurance type (1-Motor, 2-Life) >> 2
Enter Company name (1-Prudential, 2-Etiqa, 3-AIA) >> 1

Total to Pay = 1860.00

Welcome to Online Pay Insurance

Enter amount to pay >> 1000.00
Enter Insurance type (1-Motor, 2-Life) >> 2
Enter Company name (1-Prudential, 2-Etiqa, 3-AIA) >> 2

Total to Pay = 950.00


Welcome to Online Pay Insurance

Enter amount to pay >> 2000.00
Enter Insurance type (1-Motor, 2-Life) >> 2
Enter Company name (1-Prudential, 2-Etiqa, 3-AIA) >> 3

Total to Pay = 1860.00
```

Figure Q4(b)

(20 marks)

-END OF QUESTIONS –

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