POLITEKNIK MALAYSIA
SEBERANG PERAI

DEPARTMENT OF INFORMATION AND COMMUNICATION TECHNOLOGY
PROBLEM BASED TASK 1 | SESSION: 2 2023/2024

COURSE CODE : DFC20113	**COURSE NAME : PROGRAMMING FUNDAMENTALS**
CLO2: Show a simple program by developing code to solve problems in a computer using C++ programming language. (P2, PLO3)	
DURATION : 9 hours	
NAME:	

INSTRUCTION: Answer **ALL** the questions. Students are asked to discuss and submit the findings of the discussion in CIDOS. Discussions should be done in groups of 3 (three). Students will be assessed according to the Rubric included along with the questions.

TOTAL MARKS:

/ 100

START YOUR TASK WITH THE FOLLOWING SECTIONS:

```
/*
PROBLEM BASED TASK 1
Name :
Matric No. :
Class :
*/
```

QUESTION 1

TNB wants to develop a system to calculate electricity bills for customers. There are six different prices for each customer. Based on the table rate, you are an IT staff required to create a program.

(CLO2, P2) i. Display the source code to produce the correct output in C++.

(CLO2, P2) ii. Display the output for each rate.

KILOWATT	PRICE(CENTS)
1 - 500	0.30
501 - 600	0.39
601 -700	0.40
701 - 800	0.41
801 - 900	0.43
> 900	0.46

QUESTION 2

```
Following is the menu of the items available in grocery shop
1. Chocolates
2. Toffees
3. Cookies
4. Cakes
Enter the no corresponding to the item
2
You have chosen Toffees


...Program finished with exit code 0
Press ENTER to exit console.
```

Figure 1

Based on Figure 1, shows a C++ program using:

(CLO2, P2) i. **Switch case** statement
(CLO2, P2) ii. **If else** statement.

(CLO2, P1) From the program, list the data type and variables.

QUESTION 3

A class of ten (10) students took a quiz. Determine the average mark for this quiz. Based on this problem, you are required to create a program using:

(CLO2, P2) i. **while** statement
(CLO2, P2) ii. **do while** statement.

INFORMATION AND COMMUNICATION TECHNOLOGY DEPARTMENT
LABORATORY TASK / PROBLEM BASED TASK RUBRIC

COURSE CODE	DFC 20113	COURSE NAME	PROGRAMMING FUNDAMENTALS
CLO2: Show a simple program by developing code to solve problems in a computer using C++ programming language. (P2, PLO3)		LECTURER'S NAME	
STUDENT'S NAME	1.	REGISTRATION NUMBER	1.
	2.		2.
	3.		3.

CRITERIA	MARKS				STUDENT'S SCORE		
	4	3	2	1	1	2	3
RECOGNIZING PROBLEM	Excellent recognizing problem, plan and develop alternative ideas.	Good recognizing problem, plan and develop alternative ideas.	Satisfactory recognizing problem, plan and develop alternative ideas.	Need guide recognizing problem.			
PROGRAM DESIGN	The program design uses appropriate structures. The overall program design is very appropriate.	The program design generally uses appropriate structures. Program elements exhibit good design.	Not all of the selected structures are appropriate. Some of the program elements are appropriately designed.	Few of the selected structures are appropriate. Program elements are not well designed.			
PROBLEM SOLVING	Able to solve all the problems correctly without supervision.	Able to solve all the problems correctly with minimum supervision.	Only able to solve a few problems, but managed to solve problems with supervision.	Unable to solve all the problems, but managed to solve the problems with supervision.			
EFFICIENCY OF : CODING 1	Solution is efficient, easy to understand, and maintain.	Solution is efficient and easy to follow.	A logical solution that is easy to follow but it is not the most efficient.	Not efficient and not the correct solution.			
EFFICIENCY OF : CODING 2	Solution is efficient, easy to understand, and maintain.	Solution is efficient and easy to follow.	A logical solution that is easy to follow but it is not the most efficient.	Not efficient and not the correct solution.			
EFFICIENCY OF : CODING 3	Solution is efficient, easy to understand, and maintain.	Solution is efficient and easy to follow.	A logical solution that is easy to follow but it is not the most efficient.	Not efficient and not the correct solution.			
PROGRAM EXECUTION	Program executes correctly with no syntax or runtime errors.	Program executes with a minor error (easily fixed errors).	Program executes with a major error (difficult to fix errors).	Program does not execute.			
PRODUCE REQUIRED OUTPUT	Program displays correct output as needed with no errors.	Program displays output with minor errors.	Program displays output but has multiple errors.	Program displays incorrect output.			
USER PROMPT	Excellent user prompt, good use of symbols, spacing in output through completed testing.	User prompt are understandable, minimum use of symbols, spacing in output through completed testing.	User prompt contain little information, poor design. Some testing has been completed.	User prompts are misleading or non-existent. No testing has been completed.			
PROGRAM DOCUMENTATION	Program is well documented complete with comments.	Most of the program is well documented complete with comments.	Some of the program is well documented complete with comments.	All documentation missing comments.			
				TOTAL MARKS			