

**UNIVERSITY COLLEGE TATI (UC TATI)****FINAL EXAMINATION QUESTION BOOKLET**

COURSE CODE	: BCT1113
COURSE	: COMPUTER PROGRAMMING
SEMESTER/SESSION	: 2-2021/2022 / 2-20222023
DURATION	: 3 HOURS

Instructions:

1. This booklet contains 5 questions. Answer **ALL** questions.
2. All answers should be written in answer booklet.
3. Write legibly and draw sketches wherever required.
4. If in doubt, raise your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 5 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

- a) Define program and programming. (4 marks)
- b) List **THREE (3)** processes of writing program. (3 marks)
- c) List **THREE (3)** common programming mistakes that can occurred when we write a computer program. (3 marks)

QUESTION 2

- a) What is the comment function? Write **TWO (2)** ways of writing comments in C++. (4 marks)
- b) Describe 'reserved words' in programming. Give **TWO (2)** examples of reserved words in C++. (4 marks)
- c) The following names are invalid identifiers. Describe the reasons.
- i. 123point (2 marks)
 - ii. string (2 marks)
- d) Suppose that x , y , z and w are `int` variable. What is stored in x , y , z and w after the following statements executed?
- ```
x = 9;
y = x - 4;
z = (y + 7) % 6;
w = (x * z) / y - 3;
z = w + (x - y + 2) % x;
```
- (4 marks)
- e) Write a C++ statements to accomplish the following:
- i. Declare `int` variables `num1` and `num2`. Initialize `num1` to 28 and `num2` to 18. (2 marks)
  - ii. Update the value of an `int` variable `num1` by adding 5 to it. (2 marks)

**QUESTION 3**

- a) Suppose `x`, `y` and `z` are `int` variables and `ch` is a `char` variable. Consider the following input:

78      86      18      #42

What value is assigned to `x`, `y`, `z`, and `ch` after each of the following statements execute? (Use the same input for each statement.)

- i. `cin >> x >> y >> z >> ch;` (2 marks)
  - ii. `cin >> ch >> x >> y >> z;` (2 marks)
  - iii. `cin >> x >> ch >> y >> z;` (2 marks)
- b) What is the purpose of the manipulator `setprecision`? Which header file must be included to use the function `setprecision`? (2 marks)

- c) What is the output of the following code segment?

```
double a = 87.45271, b = 102.00567;
cout <<fixed<<showpoint;
cout<<setprecision(2);
cout<<a<<endl;
cout<<b;
```

(2 marks)

**QUESTION 4**

- a) Explain the difference between `'=`' and `'=='`. (2 marks)
- b) Rewrite the following expressions using an `if...else` statement.
- i. `(marks > 40) ? grade = pass : grade = fail;` (2 marks)
  - ii. `(age < 12) ? price = 15.00 : price = 25.00;` (2 marks)
  - iii. `(colour == blue) ? discount = 10 : discount = 0;` (2 marks)

- c) A company would like you to help them in designing and writing a program to calculate the amount of travel claim based on Table 1. The program will prompt user to input the distance of the travelling and it will be calculated accordingly to produce the total claim. The program will display invalid input if the input less than 1km.

Table 1

| Distance       | Cent/km |
|----------------|---------|
| 1-500 km       | 70      |
| 500 – 1000 km  | 65      |
| 1001 – 1700 km | 55      |
| 1701 and above | 50      |

The possible output is as below:

```
Input the distance:
0
Invalid input

```

```
Input the distance:
1200
The claim cost is RM660

```

- i. Draw the flowchart. (10 marks)
- ii. Write a C++ code. (12 marks)

### QUESTION 5

- a) While is pretest loop; meanwhile do...while is posttest loop. Distinguish between a pretest loop and a posttest loop. (4 marks)
- b) Write a program that prompts the user to enter two integers (the first one must be smaller than the second one). The program outputs how many numbers are multiples of 4 and how many numbers are multiples of 7 between the two integers (inclusive). If the first integer input is larger than the second input, it will display invalid input.

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The possible outputs are as follow:

```
Input integer 1: 35
Input integer 2: 12
Invalid input

```

```
Input integer 1: 6
Input integer 2: 74
There are 17 numbers is multiple of 4
There are 10 numbers is multiple of 7

```

- i. Design the flowchart.
- ii. Write a C++ program.

(13 marks)

(13 marks)

-----End of question-----

