

**UTHM**

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA**FINAL EXAMINATION
SEMESTER II
SESSION 2016/2017**

COURSE NAME : **COMPUTER PROGRAMMING**
COURSE CODE : **BFC 20802**
PROGRAMME CODE : **BFF**
EXAMINATION DATE : **JUNE 2017**
DURATION : **2 HOURS 30 MINUTES**
INSTRUCTION : **ANSWER ALL QUESTIONS**

THIS QUESTION PAPER CONSISTS OF SEVEN (7) PAGES

SECTION A

Q1 Please answer **T (True)** or **F (False)** for the following statements.

	Questions	TRUE	FALSE
a	Keyboards, speaker, laser pointer and mouse are input devices for computer.		
b	C++ programming support procedure-oriented and objective oriented programming approach.		
c	Flowline (flowchart symbol) used to add descriptions or clarification.		
d	<input type="text"/> is a flowchart symbol to present input/output.		
e	An identifier is a programmer-defined name for some part of a program such as variables and functions.		
f	Expressions is an element of program with combinations of operands and operators. It will compute new values from old ones.		
g	if marks is 100, then marks != 0 is true, and x == 0 is false		
h	++Z is post fix and Z++ is prefix mode operator.		
i	Function call is a statement causes a function to execute.		
j	Array element subscripts is start at 1.		

(10 marks)

SECTION B

Q2 State whether the following variable names are valid or invalid. If they are invalid, state the reason.

No	Variable	Answer
a	thexyzaxis_321	
b	'a'_oil_price	
c	A_123	
d	int_main	
e	%price	
f	switch	

(6 marks)

Q3 Provide the result of the given Boolean expression for the given variable value:
`int x=7, y=6, z=6;`
`double i=3.25, j=5.6;`

No	Expression	Answer
a	<code>(x==7)</code>	
b	<code>(y*z >= x)</code>	
c	<code>(x+3>y*z)</code>	
d	<code>((y=7)==x)</code>	

(4 marks)

Q4 Solve the following arithmetic expression. The final answer must in the form of `int` data type.

No	Expression	Answer
a	<code>2+2*5</code>	
b	<code>2+3*5/2+1</code>	
c	<code>5+2/7%3*10</code>	
d	<code>(11+3)%5*7</code>	
e	<code>30%2*1-6/7</code>	

(5 marks)

Q5 Define the action of the listed predefined functions that used to format output in C++.

No	Predefine function	Answer
a	setw(n)	
b	setprecision(n)	
c	showpoint	
d	endl	
e	fixed	

(5 marks)

Q6 Identify and correct the error(s) in each of the followings:

```
(a) int main();
    {
    int a;
    cout << "INSERT ONE INTEGER;;
    cin >> a;
    }
```

(2 marks)

```
(b) if (b > 0);
    {
        cout >> "THE NUMBER IS POSITIVE" << endl;
    }
```

(2 marks)

```
(c) #include <isostream>
    using namespace std;
    int main()
    {
```

(2 marks)

```
(d) while (x <15)
    }
        cout >> "t/t" << x << "/n";
```

(2 marks)

```
(e) for ( i = 0; i <= n; i++)
    {
        plus = plus - i
    }
```

(2 marks)

Q7 Fill in the blank with the correct answer:

```

1 | include <_____>
2 | using _____std;
3 |
4 | int _____ ()
5 | {
6 |     _____ mileage, rate, claim;
7 |     // calculate the travel claim
8 |     _____ << "What is your travel distance?";
9 |     cin >> mileage;
10 |
11 |     // input the rate per mileage
12 |
13 |     _____ >> rate;
14 |
15 |     // calculate the claim
16 |
17 |     claim = mileage*_____;
18 |
19 |     // display the claim
20 |
21 |     _____ << "Your claim will be =" << claim << endl;
22 |     system ("_____")
23 |     _____ 0;
24 | }
```

(10 marks)

Q8 Determine the correct answer in the missing codes.

```

1 | int main()
2 | {
3 |     _____ n, k, f1, f2, f;
4 |     if (n<2) _____ n;
5 |     _____ {
6 |         f1=f2=1;
7 |         _____ (k=2; k<n; k++)
8 |         {
9 |             f=f1+f2
10 |            f2=f1
11 |            f1=f;
12 |        }
13 |     _____ f;
14 | }
```

(5 marks)

Q9 Describe the differences between these two parameters, including an example.

- a) Statement and expression
- b) Function and library

(5 marks)

Q10 Write a C++ program based on the output given below:

```
Let's play a game.  
Please enter any number between 1 to 10.
```

```
Enter a number : 2  
Enter a number : 5  
Enter a number : 8  
Enter a number : 1  
Enter a number : 3  
Enter a number : 9  
Enter a number : 10
```

```
The sum is 38.
```

(10 marks)

Q11 The type of flow in a piping system or stream for a construction of a dam can be determined based on the Reynold's number. Reynold's number is determined based on the following formula:

$$R_e = \frac{\rho V D}{\mu}$$

Where,

ρ – density of the water

V – velocity of the flow

D – length/ diameter of the fluid

μ - viscosity of the water

The Reynold's number for each type of flow for piping and stream are given in the following tables:

Table 1 : flow for piping system

Reynold's Number	Type of Flow
< 2000	Laminar flow
2000 – 4000	Transition flow
> 4000	Turbulent flow

Table 2 : stream flow

Reynold's Number	Type of Flow
<= 500	Very slow (shallow flowing water)
2000 – 4000	Transition flow
> 4000	Ordinary flow

Based on the given information;

- a) Identify the input and output for the program. (5 marks)
- b) Construct a flowchart for the given problem. (10 marks)
- c) Write a C++ program to show the type of flow with the function for users to select either piping system of stream flow. (15 marks)

– END OF QUESTIONS –