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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESI 2017/2018**

COURSE NAME : COMPUTER PROGRAMMING
COURSE CODE : BFC20802
PROGRAMME CODE : BFF
EXAMINATION DATE : JUNE 2018 / JULY 2018
DURATION : 3 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

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THIS QUESTION PAPER CONSISTS OF SEVEN (7) PAGES

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SECTION A

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

	Questions	TRUE	FALSE
a	Variables that are defined inside a function are global to function		
b	<i>iostream</i> is a header file to support input/output operations.		
c	Parameter can be passed to a function in three ways.		
d	Pre-process the source codes according to preprocessor directives.		
e	Arithmetic operations of an <code>int</code> and <code>double</code> will produce a <code>double</code> .		
f	A global variable is any variable defined outside all the functions in a program.		
g	The symbol <code><<</code> is called the stream insertion operator which is used to put character to the console.		
h	A program is a sequence of instructions executing one after another, usually in random manner.		
i	A variable is used to store a piece of data processing and the values stored cannot be change.		
j	Conditional statement can be used to check whether the number is odd or even, and accumulate the number into respective sum.		

(10 marks)

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SECTION B

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

No	Variable	Answer
a	return_0	
b	oil price_1	
c	*number	
d	length_column	
e	iostream_2	
f	1_cost	

(6 marks)

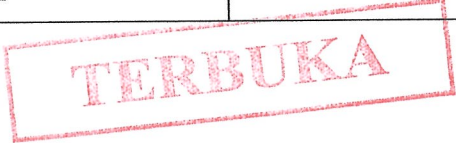
Q3 Determine the type of operator for each of the following expression. (E.g.: relational operator).

No	Expression	Answer
a	=>	
b	+	
c	&&	
d	=	

(4 marks)

Q4 Write the steps number of each process of writing a C++ programming.

No	Expression	Answer
a	Execute	
b	Write source codes	
c	Preprocess	
d	Loader	
e	Compile	



(5 marks)

Q5 Define the name and explain the function of each operator that used in C++ programming as provided in table below.

No	Operator	Precedence
a	>=	
b	/* */	
c	#	
d	;	
e	{ }	

(5 marks)

Q6 Write a single C++ statement or line that accomplishes each of the following:

(a) Display the following output using a single cout keyword.

Subject	Marks
Mathematics	90
Computer	77
Chemistry	69

(2.5 marks)

(b) Find the absolute value of a number entered by the user.

(2.5 marks)

Q7 Draw a segment flowchart using if-else method to solve the following problem.

Weight (grams)	Display message
0.1-9.9	Light
10.0-49.9	Slightly heavy
50.0-99.9	Heavy
>=100	Very heavy

(5 marks)



Q8 What is the output of following program?

- (a) `int x = 10, y;
y = x++;
cout << y;`
- (b) `int x = 10, y;
y = x++;
cout << x;`
- (c) `int x = 10;
x++;
cout << x;`
- (d) `int x = 10, y;
y = ++x;
cout << y;`
- (e) `int x = 10;
cout << ++x;`
- (f) `int x = 10;
cout << x++;`
- (g) `int x = 10, y;
y = x + x++;
cout << y;`
- (h) `int x = 10, y;
y = ++x + x++ + x;
cout << y;`
- (i) `int x = 10, y;
y = x++ + x + ++x;
cout << y;`
- (j) `int a = 5 + 7 % 2;
cout << a;`

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(10 marks)

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SECTION C

Q11 FIGURE Q11 shows two objects with the mass of m_1 and m_2 , which are connected with a cable passing through a frictionless pulley. The equilibrium equation for establishing the motion created by the masses can be determined as:

$$m_1g - T = m_2a$$

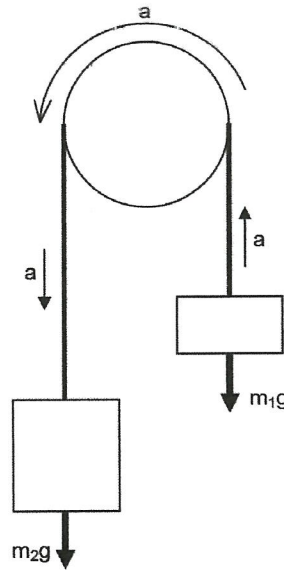


FIGURE Q11

- (a) Determine the input, output and process that are required to calculate the acceleration a (m/s^2) based on Figure Q11. (5 marks)
- (b) Draw a flowchart to calculate the acceleration a (m/s^2) obtained from the motion of the cable. Apply control structure for tracing any invalid input that might occur in the program. Mass of m_2 should be higher than mass m_1 ($m_2 > m_1$). (10 marks)
- (c) Write a complete C++ program that representing the flowchart in Q11 (b). (15 marks)

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– END OF QUESTIONS –

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