



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2019/2020**

COURSE NAME : COMPUTER PROGRAMMING
COURSE CODE : BEV10102 / BEC10102 / BEJ10102
PROGRAMME : BEV / BEJ
EXAMINATION DATE : DECEMBER 2019 / JANUARY 2020
DURATION : 2 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS IN
THE QUESTION PAPER

NAME : _____
MATRIC NO. : _____
SECTION : _____
LECTURER : _____

THIS QUESTION PAPER CONSISTS OF **TEN (10)** PAGES

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- Q1 (a) Analyse the following program to locate four (4) errors. Draw a circle to the errors.

```
char bt;

cout<<"Enter your blood type:";
cin>>bt;

Switch(bt)
    case 'A': cout<<"You can donate to A and AB type"; ;
    case 'B': cout<<"You can donate to B and AB type"; break;
    case 'O': cout<<"You can donate to all"; break;
    dafault: cout<<"You can donate to AB type only.";
}
```

(8 marks)

- (b) Assume all errors are fixed. Rewrite the *switch* statement into *if-else* statement without changing its functionality.

(12 marks)

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Q2 (a) Based on the following *for* statement, answer True (T) or False (F) for (i) to (iv).
`for (i=0; i<100; i+=2) cout<<"Great Job\n"; cout<<"Loop Ends";`

- (i) The $i=0$ is executed at every iteration.
- (ii) The loop body is `cout<<"Great Job\n";`
- (iii) The final value of i that terminates the iteration is 100.
- (iv) Prints *Great Job* and *Loop Ends* on a screen for 50 times.

(8 marks)

(b) Write a C++ program that allows the user to process the loop as long as a user input an odd number. When the user input an even number, display an appropriate message to terminate the program. **Figure Q2(b)** shows the sample output of the program.

Enter an integer number: 5 Enter the next integer number: 7 Enter the next integer number: 111 Enter the next integer number: 4 You have entered an even number to terminate the program.

Figure Q2(b)

(12 marks)

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- Q3 (a) The best way to develop and maintain a large program is to organize a program into several smaller routines called functions by using modular design. State four (4) benefits of modular design in C++ programming. Explain each benefit in detail.

(8 marks)

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- (b) Write a *void* function definition for a function called *zero_both* that has two reference parameters *n1* and *n2*, both of which are variables of type *int*, and sets the values of both variables to 0.

(6 marks)

- (c) Write a double type value-returning function definition for a function called *cube_volume* that has a reference parameter *side_length* of type double variable. The function calculates the volume of a cube.

(6 marks)

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Q4 (a) Examine the following function definition. Then answer (i) and (ii).

```
Line 1 | double ComputeVolume ( double r, double h, double s) {  
Line 2 |     if ((r==0)||(h==0)||(s==0))  
Line 3 |         return 0;  
Line 4 |     else  
Line 5 |         return (1*(3.14 *r*r*h)/s);  
Line 6 | }
```

(i) Write a suitable function call for *ComputeVolume*.

(4 marks)

(ii) Determine the value that will be passed to the caller. Assume $r=3$, $h=2$ and $s=3$. Show your works.

(4 marks)

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- (b) Fill in the blanks with appropriate answers.

```
#include <iostream>
using namespace std;

_____ // function declaration

int main () {
    int ret, a = 100, b =200; // local variable declaration

    // calling a function to get max value and store it in ret.
    _____ = max(_____, _____);

    // display the value in ret
    cout << "Maximum value is : " << ret << endl;

    return 0;
}

//function returning the max between two numbers
int _____ (_____ num1, int num2 )
{
    int _____; // local variable declaration

    if (num1 > num2) //determine max value
        result = num1;
    else
        result = num2;

    _____ //return the final value to the caller function
}
}
```

(12 marks)

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- Q5 (a) How would you illustrate the following declaration?
`int num_of_cars[] = {101, 23, 7, 89};`

(5 marks)

- (b) Examine the following program.

```
#include <iostream>

using namespace std;

int main()
{
    char wish[30];

    cout<<"Tell me one of your wishes:"; //prompt and
    cin.getline(wish,29);                //read wish inputted by user

    cout<<" I pray you will get "<<wish<<endl; //display the wish

    return 0;
}
```

When the user entered A+ for my programming class, do you think, the program will able to display the output in **Figure Q5(b)**? State a reason for your answer.

```
Tell me one of your wishes: A+ for my programming class
I pray you will get A+ for my programming class
```

Figure Q5(b)

(3 marks)

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- (c) Fill in the blank with correct C++ statements that matches with the given description within the program.

```
#include <iostream>

using namespace std;

const int SIZE = 100;

int main()
{
    int num=0;                //declare variable to store input
    int even[SIZE]={0};      //declare an int-type array even with size 100
    int odd [SIZE]= {0};     //declare an int-type array odd with size 100

    cout<<"Enter up to 100 integer numbers:\n";
    for (int i=_____ ; i<SIZE; i++) //loop for 100 times to:
    {
        cout<<"Input #"<<i+1<<": "; //prompt
        cin>>num;                //and read 100 integer numbers

        if (num%2==0)            //if num is even
            _____          //then store the value of num in array even
        else                    //otherwise
            _____          //store the value of num in array odd
    }

    _____ //loop to:
    {
        _____ //display all contents of array even
        _____ //display all contents of array odd
    }

    return 0;
}
```

(12 marks)

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- END OF QUESTIONS -

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