UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2015/2016

COURSE NAME	:	COMPUTER PROGRAMMING I
COURSE CODE	:	BWB 10203
PROGRAMME CODE	:	BWQ
EXAMINATION DATE	:	JUNE / JULY 2016
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF **SEVEN (7)** PAGES

SECTION A: TRUE OR FALSE AND EXPLAIN YOUR ANSWER

Q1   In a counter-controlled `while` loop, it is not necessary to initialize the loop control variable.

(3 marks)

Q2   A pointer that is declared to be of type `void` can be dereferenced.

(3 marks)

Q3   A pointer of one type can't be assigned to one of another type without a cast operation.

(3 marks)

Q4   You must create the `cin`, `cout`, `cerr` and `clog` objects explicitly.

(3 marks)

Q5   A program must call function close explicitly to close a file associated with an `ifstream`, `ofstream` or `fstream` object.

(3 marks)

Q6   If the file-position pointer points to a location in a sequential file other than the beginning of the file, the file must be closed and reopened to read from the beginning of the file.

(3 marks)

Q7   Template parameter names among template definitions must be unique.

(3 marks)

Q8   Data in sequential files always is updated without overwriting nearby data.

(3 marks)

Q9   Consider the following source code.

```
=======================================
      cin >> num;
      if (num > 5)
          cout << num;
          num = 0;
      else
      cout << "Num is zero" << endl;
=======================================
```

Suppose the input is 5. The output of the code is: Num is zero

(3 marks)

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Q10   Consider the following syntax:

```
char name[16] = "John K. Miller";
```

The above syntax declares `name` to be an array of 15 characters because the string "`John K. Miller`" has only 14 characters.

(3 marks)

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SECTION B – SHORT ANSWER.

Q11   Refer the following C++ code:

```
1      #include <iostream>
2      using namespace std;
3      int main()
4      {
5        int num1, num2;
6        cout<<"Enter number 1:  ";
7        cin << num1;
8        cout <<"Enter number 2:  ";
9        cin >> nom2;
10       nom3 = nom2;
11            if (num1 <> num2);
12            total = num1 + num2;
13            cout<<"\nThe result of modulus is >> "<<  total % 3;
14       Return 0;
15     }
```

(a)   The above program has syntax errors. Find the errors by specifying the line numbers and explain the reasons.

(5 marks)

(b)   Rewrite the selection control statement so that it will display the modulus result if number 2 is larger than number 1, and average of three number if not.

(7 marks)

(c)   Write the selection control command so that it saves the larger number in num3.

(3 marks)

Q12   Refer the following C++ code:

```
==============================================================
1.      #include<iostream>
2.      using namspace std;
3.      int main()
4.      {
5.      int staff;
6.      int workhr;
7.      double rathr, salary;
8.      staff_no=1;
9.
10.     cout<<"Enter working hour and rate per hour: "
11.     workhr<<rather<<cin;
12.     salary=workhr*ratehr;
13.
14.     cout<<"Salary is: RM "<<salary<<endl;
15.     staff_no = staff_no-1;
16.     } while(staff_no<5)
17.
18.     Return 0 ;
19.     }
==============================================================
```

(a)   The above program has syntax errors. Find the errors by specifying the line numbers and explain the reasons.

(5 marks)

(b)   Rewrite the conditional selection command so that it will allow EXACTLY ten staffs to calculate their salary.

(2 marks)

(c)   Write a function definition, function prototype and function call that will used to calculate salary named `Cal_Salary`. Then, write `cout` syntax to display the calculated salary.

(8 marks)

Q13   Refer the following C++ code:

```
1.      #include <iostream>
2.      using namespace std;
3.      int main()
4.      {
5.          int r=0;
6.          const PI=3.14;
7.          cout << "Enter radius value of a circle: ";
8.          cin >> radius;
9.          while (r!=0);
10.             r++;
11.                     do
12.                     {
13.                     luas = PI*radius*radius;
14.                     cout <<"\nThe size of a circle is: " << luas << endl;
15.                     cout <<" Enter another radius value: ";
16.                     cin >> r;
17.                     }
18.         return 0;
19.     }
```

(a)   The above program has syntax errors. Find the errors by specifying the line numbers and explain the reasons.

(5 marks)

(b)   If the errors has been corrected. What would be the output of the above program?

(2 marks)

(c)   How many times block { . . } is repeated?

(2 marks)

(d)   If the conditional repetition structure has changed to `while  (r<=3)`, how many time the block { . . } is repeated?

(2 marks)

(e)   Remove two commands from the lines 15-16 in block { . . } . What will happen? Explain.

(4 marks)

SECTION C– WRITE A PROGRAMMING.

Q14   Write a source code to evaluate and display the total numbers based on array categories. The `switch` method should be used to evaluate the type of categories. There are five (5) arrays of 100 based on the categories. Given the categories, set a string description as follows: 100= "Adventure", 200 = "Science Fiction", 300 = "Literature", 600 = "Epics", 700 = "History". The user can repeat the program a few times until he/she request the program to stop. Once the program stopped, it will display the total number of each categories.

(25 marks)

- END OF QUESTION -