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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2013/2014**

COURSE NAME : COMPUTER PROGRAMMING
COURSE CODE : BEC10102
PROGRAMME : BEJ
EXAMINATION DATE : JUNE 2014
DURATION : 2 HOURS
INSTRUCTION : A) ANSWER ALL QUESTIONS.
B) WRITE ALL ANSWERS
USING BLUE/BLACK INK
PEN. ANY ANSWERS
WRITTEN IN PENCIL WILL
NOT BE GRADED.

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

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INSTRUCTION: Write **all** answers **using** blue/black ink pen. Any answers written using pencil will **not** be graded.

- Q1** (a) With the aid of diagram, explain the differences between the following arrays.

```
char s1[]={ 'a', 'b', 'c'};
char s2[] = "abc";
```

(8 marks)

- (b) Construct a C++ program that will read up to ten letters into an array and write the letters back to the screen in the reverse order. Use a period as a sentinel value to mark the end of the input. For example, if the input is

Happy.

then the output should be

yppaH

(17 marks)

- Q2** The following code is given. Please note that the left column is representing line numbers that have been added for you to identify certain parts of the program.

```

1.  #include <iostream>
2.  using namespace std;
3.
4.  void main(){
5.
6.  int input, total_evenInput, total_oddInput;
7.
8.  input=count=sum=total_evenInput=total_oddInput=0;
9.  average=0.0;
10.
11.  while(1){
12.      cout<<"Insert integer numbers ";
13.      cout<<"(type -1 to stop the input):";
14.      cin>>input;
15.
16.      if (input==-1)
17.          break;
18.
19.      (input%2==0)?total_evenInput+=1:total_oddInput+=1;
```

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```
20. |  
21. |   }  
22. |  
23. |   cout<< total_evenInput << endl;  
24. |   cout<< total_oddInput << endl;  
25. |   }
```

- (a) What does a `break` statement do? (3 marks)
- (b) Rewrite the statement in line 19 using `if-else` statement. (8 marks)
- (c) What will be the last value stored in the `total_evenInput` and the `total_oddInput` if the following inputs as shown in **Figure Q2(c)** are inserted?

```
Insert integer input (type -1 to stop the input):3  
Insert integer input (type -1 to stop the input):7  
Insert integer input (type -1 to stop the input):100  
Insert integer input (type -1 to stop the input):-1
```

Figure Q2(c)

- (d) Prove your answer in **Q2(c)** using tracing method. (12 marks)

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Q3 (a) What is the return type of the `main` function? (2 marks)

(b) The following statement is given. Answer (i) and (ii).

```
int larger = max (3,4);
```

(i) Write `max` function to find the largest between two integer values using the given function call. (12 marks)

(ii) Write its function prototype. (3 marks)

(c) The following code is given. Please note that the left column is representing line numbers that have been added for you to identify certain parts of the program.

```

1. | main(){
2. |     function2(2);
3. | }
4. |
5. | int function1(int a, b)
6. | {
7. |     cout<<a;
8. | }
9. |
10. | function2(){
11. |     n+=1;
12. |     function1(3,4);
13. | }
```

(i) Identify the errors in the program. (3 marks)

(ii) Fix the errors. (5 marks)

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Q4 (a) Construct a C++ program based on the following pseudo code.

Begin

1. Declare float variable tempInF
2. Declare float variable tempInC
3. Declare float variable C
4. Declare constant float factor = 5/9
5. Declare constant float freezing = 32.0
6. Print "Please enter temperature in Fahrenheit"
7. Read tempInF
8. $C = \text{factor} \times (\text{tempInF} - \text{freezing})$
9. Print tempInF, "Fahrenheit equals to", C, "Celcius"

End

(15 marks)

(b) The following code should display on the screen the even integers range from 2 to 100.

```
int counter;  
Do  
    counter+=2;  
While (Counter < 101)
```

Examine the code and identify whether it is an error-free code or not. If it is not, fix it.

(10 marks)

- END OF QUESTIONS -