king Saud University

College of Computer and Information Sciences

Computer science department

Final Exam Spring 2018

CSC 201-Programming in C++

40 Marks

Student Name: ………………………

Student ID:

Question 1: Multiple Choice(10 Marks)

1. Which of the following is correct regarding constructor?
[A] class name and constructor name is same
[B] constructor does not return value
[C] constructor has return type
[D] Both A and B are correct.
[E] All are correct.

2. Which of the following is not a return type?
A] void   [B] int   [C] double
[D] Both B and C are correct.
[E] None of the above

3. Which of the following are themselves a collection of different data types
[A] string
[B] structure
[C] char
[D] All the above

4. What is the output of the following code?
```
#include <iostream>
#include <string>
using namespace std;
main() {
  int a[] = {10, 20, 30};

        cout<<a[0]+1;
}
```

 [A] 10 [B] 20   [C] 11   [D] 21

5. Which of the following correctly declares an array?
[A] int array[10];
[B] int array;
[C] array{10};
[D] array array[10];

6. Which is used to define the member of a class externally?
   [A] :   [B] ::   [C] #   [D] none of the mentioned

7.
```
#include <iostream>
using namespace std;
 int main () {
  // local variable declaration:
  int x = 1;

  switch(x) {
  case 1 :
    cout << "Hi!" << endl;
    break;
  default :
    cout << "Hello!" << endl;
  }
return 0;
}
```
[A] Hello! [B] Hi! [C] Hello!Hi! [D] Compile error

8. Which of the following is a valid class declaration?
   [A] class A { public: int x; };
   [B] class B { }
   [C] public class A { }
   [D] object A { int x; };

9. What is the output of this program?
```
   #include
   using namespace std;
   int main()
   {
   int a;
   a = 5 + 3 * 5;
   cout << a;
   return 0;
   }
```
   [A] 35
   [B] 20
   [C] 25
   [D] 30

10. What is the index number of the last element of an array with 9 elements?
a) 9
b) 8
c) 0
d) Programmer-defined

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Question 2:

Question: 2(a)   **(3 Marks)**

Give the output for the following questions

```cpp
#include <iostream>
#include <string>


using namespace std;
main() {
 int A =1;
int B =2;
if(((A==1) || (B==2)) && (B==0))
 cout<<"This exam was difficult ";
else
 cout<< "This exam was easy ";

}
```

Output	
	This exam was easy

Question: 2(b)   **(3 Marks)**

```cpp
#include <iostream>
#include <string>

using namespace std;

 int main() {
string a[] = { "Argentina", "Korea", "Greece",
"Nigeria"};
cout << a[0+1] << endl;
cout << a[0] << endl;
cout << a[3] << endl;
return 0;
}
```

Output	Korea
	Argentina
	Nigeria

Question: 2(c)   (4 Marks)

What would be printed from the following C++ program?

```cpp
#include<iostream>
#include<conio.h>
using namespace std;
int main(){
 int arr[5]={1,3,5,7,9};
 for(int i=0;i<5;i++) //output arr array
    cout<<arr[i]*arr[i]<<"\t";
 return 0;}
```

Output					
	1	9	25	49	81

Question 3:   (10 Marks)

Write a C++ to create a **class student** with the following information below

studentid []: int of array size 5
studentname[]:string of array size 5

Empty Constructor
studentid=0;
studentname=" ";
Constructor with parameter(int stdid[], string studname[])
Display method : print the values of studentid and student name.

Create an object and call the method display

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

class student
{
   public :
   student();
   student(int stdid[], string studname[]);
   void display();
   private:
   int studentid[5];
   string studentname[5];

   };

student::student()
{
    studentid[0]=0;
    studentname[0]="NUll";

   }
student::  student(int stdid[], string studname[])
{
   for ( int i=0; i<5; i++)
   {
      studentid[i]=stdid[i];
      studentname[i]=studname[i];

      }

   }
void student::display()
 {
    for ( int i=0; i<5; i++)
{
 cout<<studentid[i]<<endl;
 cout<<studentname[i]<<endl;
 }
    }

 int main ()
{
 int studid[5];
 string studname[5];
```

```cpp
for(int i=0; i<5; i++)
 {
 cin>>studid[i];
 cin>>studname[i];
 }
 student std;
 student std1(studid,studname);
 std.display();
 std1.display();
return 0;
 }
```

Question 4:   **(10 Marks)**

Write a C++ to create an array numbers of size 5 with integer value and create a method void input(), void output(), int max(), int min();
void input(): use input statement to input the values
void output(): use output statement to print the values
int max(): finds the maximum value and returns the maximum
int min(): finds the minimum value and returns the minimum.

Sample Output:
Enter the value of input : 45
Enter the value of input : 56
Enter the value of input : 68
Enter the value of input : 9
Enter the value of input : 23
The entered values is : 45
The entered values is : 56
The entered values is : 68
The entered values is : 9
The entered values is : 23

The maximum value is 68
The minimum value is 9
Note: No class and arrays should be declared globally

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```cpp
#include <iostream>
using namespace std;
int numbers[5];

void input()
{

    for(int i=0; i<5; i++)
    {
    cout<<"Enter the value of input: ";
    cin>>numbers[i];
    }
        }

void output()
{

    for ( int i=0; i<5; i++)
    {

    cout<<"The entered values is : "<<numbers[i]<<endl;

    }

    }
 int max()

 {
    int max=numbers[0];
    for(int i=0; i<4; i++)
    {

    if(max<numbers[i+1])
        max=numbers[i+1];
    }
    return max;

    }

int min()

 {
    int min=numbers[0];
```

```cpp
for ( int i=0; i<4; i++)
    {

    if ( min>numbers[i+1])
        min=numbers[i+1];
    }
    return min;

}

int main()
{
  input();
  output();
  cout<<"The maximum value is "<<max()<<endl;
  cout<<"The minimum value is "<<min();
  return 0;
}
```