UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 2, Examination in Engineering, February 2020

Module Number: EE2201   **Module Name: Computer Programming II**

Part-A
[1 hour]

Instructions for candidates

- Write your index number on top of every page.

- Question paper contains 40 multiple choice questions.

- Answer all questions. Each question has only one answer.

- Each question carries 0.5 mark.

- **For each question, put an X mark on the letter: (a), (b), (c), or (d) which corresponds to the correct answer, by using a black or blue pen.**

Examiner's Use Only		
Q1-Q10	Q11-Q30	Q31-Q40
LO4	LO1	LO2
PO1	PO1	PO1

1. Which of the following statements is correct when a class is inherited publicly?

    (a) Public members of the base class become private members of derived class.

    (b) Public members of the base class become protected members of derived class.

    (c) Private members of the base class become protected members of derived class.

    (d) Public members of the base class become public members of derived class.

2. Which of the following can access private data members or member functions of a class?

    (a) All global functions in the program.

    (b) Any function in the program.

    (c) Any member function of that class.

    (d) Only public member functions of that class.

3. The capability of an object in C++ to take number of different forms and hence display behavior accordingly is known as:

    (a) Inheritance

    (b) Encapsulation

    (c) Polymorphism

    (d) Abstraction

4. Which of the following statements is correct about an inheritance used in C++?

    (a) One class can be inherited by only one class.

(b) One class can be inherited by one or more classes.

(c) Inherited class can use all member variables of the base class.

(d) All of the above are wrong.

5. Which of the following can derived class inherit?

(a) members.

(b) functions.

(c) both members and functions.

(d) none of the mentioned.

6. Which access specifier will you use to make base class members accessible in the derived class and not accessible for the rest of the program?

(a) public

(b) private

(c) protected

(d) static

7. Which of the following statements is correct?

(a) Data items in a class must be private.

(b) Both data and functions can be either private or public.

(c) Member functions of a class must be private.

(d) Constructor of a class cannot be private.

8. What term is used to describe the internal representation of an object that is hidden from view outside the object's definition?

(a) Encapsulation

(b) Expandable

(c) Polymorphism

(d) Inheritance

9. Which object oriented concept is related to the derivation of a class based on another class?

(a) Inheritance

(b) Data Hiding

(c) Encapsulation

(d) Polymorphism

10. What is meant by pure virtual function?

(a) Function which does not have definition of its own.

(b) Function which does have definition of its own.

(c) Function which does not have any return type.

(d) None of the mentioned.

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11. If a program compiles fine, but it produces an error during the execution of a program, then the program suffers a

(a) compilation error.

(b) runtime error.

(c) logical error.

(d) syntax error.

12. The fields in the class in C++ program are by default

(a) protected

(b) private

(c) public

(d) none of the mentioned

13. What will happen in the C++ program when **struct** is used instead of the keyword **class**?

(a) access is public by default

(b) access is private by default

(c) access is protected by default

(d) none of the mentioned

14. How the constants are declared?

(a) **const** keyword

(b) #define preprocessor

(c) both const keyword and #define preprocessor

(d) none of the mentioned

15. In which data type does the enumerators are stored by the compiler?

(a) string

(b) integer

(c) float

(d) none of the mentioned

16. What is correct about the following code segment?

```
void swap(int & lhs, int & rhs)
{
  int temp;
  temp = lhs;
  lhs = rhs;
  rhs = temp;
}
```

   (a) It can be used to swap any two variables.

   (b) It can be used to swap two integer variables.

   (c) The numbers will not be swapped.

   (d) A compilation error occurs.

17. Evaluate the following

(false && true) || false || true

   (a) 0

   (b) 1

   (c) false

   (d) none of the mentioned

18. What is the output of the following code segment?

```
int sum = 0;
for (int i = 1, j = 0; i < 5 && j < 9;
i++, j = j + 2)
sum += i + j;
cout <<"sum =" << sum<<endl;
```

   (a) 35

   (b) 16

   (c) 20

   (d) 22

19. What is the output of the following code segment?

```
#include <iostream>
using namespace std;
int main()
{
  int numbers[] = {1,2,4,5,7,1,3 };

  cout << *(numbers + 3);
  return 0;
}
```

   (a) 2

   (b) 4

   (c) 5

   (d) none of the above.

20. What is the output of the following code segment?

```
#include <iostream>
using namespace std;
int main()
{
  cout << sizeof(char) << " " ;
  cout << sizeof(int) << " ";
  cout << sizeof(float);
return 0;
}
```

   (a) 8 32 32

   (b) 1 4 4

   (c) 8 23 64

   (d) none of the mentioned.

21. What is the output of the following code segment?

```
int i = 2, j = 4;
switch (i + j * 2)
{
  case 1:
  case 2:
    cout<<"1 and 2";
    break;
  case default:
    cout<<"3 to 10";
    break;
}
```

   (a) "1 and 2"

(b) "3 to 10"

(c) Compilation error.

(d) none of the mentioned.

22. What is the output of the following code?

```
int i = 1, j = 1;
while (++i <= 10)
{
  j++;
}
cout<<i << "   " << j <<endl;
return 0;
```

(a) 10, 10

(b) 11, 11

(c) 11, 10

(d) 10, 9

23. What is the output of the following C# code?

```
int a = 5;
int b = 10;
int c = ++a + b++;
cout << c <<" "<< b << endl;
```

(a) 11 10

(b) 16 10

(c) 16 11

(d) 15 11

24. What is the output of the following code?

```
int a, b, c, x;
a = 90;
b = 15;
c = 3;
x = a - b / 3 + c * 2 - 1;
cout << x;
```

(a) 92

(b) 89

(c) 90

(d) 88

25. What is the output of the following code segment?

```
void Func1(int& a)
{
  a = a * a;
}

int main()
{
  int k = 5;
  Func1(k);
  cout << k << endl;
}
```

(a) 5

(b) 25

(c) 10

(d) Compilation error.

26. Which of the following two entities (reading from Left to Right) can be connected by the dot operator?

(a) A class member and a class object.

(b) A class object and a class.

(c) A class and a member of that class.

(d) A class object and a member of that class.

27. Which of the following types is best suited to represent a value with decimals in C++?

(a) integer

(b) boolean

(c) character

(d) double

28. Which of the following statements is incorrect about constructors in C++?

(a) Constructors cannot be overloaded.

(b) Constructors always have the name, same as the name of the class.

(c) Constructors never return any value.

(d) Constructors allocate space for the object in memory.

29. When is a constructor executed?

(a) when an object is created.

(b) when an object is used.

(c) when a class is declared.

(d) when an object goes out of scope.

30. Which of the following can be overloaded in C++?

  (a) only objects.

  (b) only functions.

  (c) only operators.

  (d) both functions and operators.

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31. Which of the following statements is correct after executing the following C# code snippet given below?

```
Student* std1, *std2;
std1 = new Student();
std2 = new Student();
```

  (a) Contents of std1 and std2 will be exactly same.

  (b) The two objects will get created on the stack memory.

  (c) Contents of the two objects will be exactly same.

  (d) The two objects will always be created in adjacent memory locations.

32. Which of the following correctly declares an array?

  (a) `int array[10];`

  (b) `int array;`

  (c) `array{10};`

  (d) `array array[10];`

33. By default how the values are passed to a function in C++?

  (a) call by value

  (b) call by reference

  (c) call by pointer

  (d) none of the mentioned

34. Which value we cannot assign to reference?

(a) integer

(b) floating

(c) unsigned

(d) null

35. Which reference modifier is used to define reference variable?

  (a) &

  (b) $

  (c) #

  (d) none of the mentioned

36. What is the output of the following code segment?

```
#include <iostream>
using namespace std;
int func (int a, int b)
{
    cout << a << b;
    return 0;
}
int main(void)
{
    int(*ptr)(char, int);
    ptr = func;
    func(2, 3);
    ptr(2, 3);
    return 0;
}
```

  (a) 2323

  (b) 23

  (c) 232

  (d) Compilation error.

37. What is the output of the following code segment?

```
#include <iostream>
using namespace std;
void square (int *x)
{
    *x = (*x + 1) * (*x);
}
int main ( )
{
```

```
    int num = 10;
    square(&num);
    cout << num;
    return 0;
}
```

(a) 10

(b) 121

(c) 110

(d) Compilation error.

38. What is the output of the following code segment?

```
int arr[] = { 4, 5, 6, 7 };
int *p = (arr + 2);
cout << *arr + *p;
```

(a) 9

(b) 11

(c) 10

(d) Syntax error.

39. What is the output of the following code segment?

```
#include<iostream>
using namespace std;
int main()
{
    int a = 5, b = 10, c = 15;
    int arr[3] = {&a, &b, &c};
    cout << *arr[*arr[1] - 8];
    return 0;
}
```

(a) 15

(b) 18

(c) garbage value

(d) Compile time error.

40. Which of the following gives the memory address of the first element in array?

(a) array[0];

(b) array[1];

(c) array(2);

(d) array;