



**EXAMINATIONS FOR 2021/2022 ACADEMIC YEAR**

**EXAMINATIONS FOR B SC. IN COMPUTER SCIENCE**

**COURSE CODE: COM 2110-1**

**COURSE TITLE: Object oriented programming 1**

**DATE: 3<sup>RD</sup>, APRIL, 2022                      TIME: 11:00-1:00 P.M**

**INSTRUCTIONS**

- Answer Question ONE and any other TWO Questions From Section II
- Question 1 is compulsory.
- Time 2HRS.
- ***SWITCH OFF*** your mobile phone.

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## SECTION I-COMPULSORY [25 marks]

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- A) Write a single C++ program segment to write numbers from 1 to 9. You MUST use the do ...while statement. **(3 marks)**
- B) When is it advisable to use the switch statement in writing a C++ code? **[2 marks]**
- C) While reading through a code segment involving use of switch statement, you observe that the programmer had used "Case1:" which appears as an error as you try to compile the program. Identify and correct the error. **[ 3 marks]**
- D) Write a C++ statement that **declares a function called mySqrt which takes an integer as an argument and returns a double** **[3marks]**
- E) Write a C++ statement to declare variable *var* to be of type *long* and initialize it to 10. **[2 marks]**
- F) Identify and correct the errors in each of the following:
- (i) while (c <= 5) { product \*= c; ++c; **(2 marks)**
  - (ii) cin << value; **(1 mark)**
  - (iii) if (gender == 1) { cout << "Woman" << endl; else; { cout << "Man" << endl; } **(2 marks)**
- G) Given the following C++ program, explain the roles of the lines (2, 6,7, 9,10, 15) in the program. **[ 12 Marks]**

```
1. #include<iostream>
2. #include<string.h>
3. using namespace std;
4. int main ()
5. {
6.     char str[50], temp;
7.     int i, j;
8.     cout << "Enter a string : ";
9.     gets(str);
10.    j = strlen(str) - 1;
11.    for (i = 0; i < j; i++,j--)
12.    {
13.        temp = str[i];
14.        str[i] = str[j];
15.        str[j] = temp;
16.    }
17.    cout << "\nReverse is : " << str;
18.    return 0;
19.}
```

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## SECTION II –CHOOSE ANY TWO QUESTIONS

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### Question Two (10 marks)

- A) For each of the following, write a statement that performs the specified task. Assume that double variables number1 and number2 have been declared and that number1 has been initialized to 7.3.
- i. Declare the variable doublePtr to be a pointer to an object of type double and initialize the pointer to nullptr. (2 marks)
  - ii. Assign the address of variable number1 to pointer variable doublePtr. (1 mark)
  - iii. Display the value of the object pointed to by doublePtr. (1 mark)
  - iv. Assign the value of the object pointed to by doublePtr to variable number2. (1 mark)
  - v. Display the value of number2. (1 mark)
  - vi. Display the address of number1. (1 mark)
  - vii. Display the address stored in doublePtr.( 1mark)
  - viii. Is the address the same as that of number1? (2 marks)

### Question Three (10 marks)

- (A) You are required to write a code to determine the area of a circle. Given that the area of a circle is calculated as  $3.14r^2$  where r is the radius of a circle to be given as input by the program user.
1. define determine a suitable class name and three objects to ask for radius input, calculate and display\_area, (5 marks)
  2. Demonstrate how you use objects and classes in calculating the area of any circle given. (5 marks)

### Question Four [10 marks]

- (a) Create a structure called student, to contain student name, registration names and marks. [3 marks]
- (b) After creating structure members and respective variables, use them in a complete program, to enable any user to enter student name, grade and marks. [5 marks]
- (c) Your program should be able to display the details as entered by user. [ 3 marks]