# KABARAK UNIVERSITY

## UNIVERSITY EXAMINATIONS

## 2009/2010 ACADEMIC YEAR

### FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE

**COURSE CODE:** **COMP 212**

**COURSE TITLE:** **OBJECT ORIENTED PROGRAMMING WITH C++.**

**STREAM:** **SESSION III**

**DAY:** **FRIDAY**

**TIME:** **9.00 – 11.00 A.M.**

**DATE:** **09/04/2010**

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**INSTRUCTIONS:**

1. **Section A is compulsory and has 30 marks.**
2. **Attempt any TWO questions from Section B. Each question has 20 marks.**

**PLEASE TURN OVER**

## SECTION A

**QUESTION 1 (30 MARKS)**

a) As a software developer, variable names have several naming rules and one has to abide to them. Identify any five of these rules. (5 marks)

b) What is a stream? Explain the standard input and output streams used in C++. (5 marks)

c) In your own understanding how would you explain Abstraction and polymorphism as used in c++. (5 marks)

d) What is type conversion? With the help of a code explain the two ways of achieving the type conversion in C++. (5 marks)

e) Functions play a very important role in any program. Explain what a function is and how to define and call a function. (5 marks)

f) Explain in detail the fundamental parts of the basic structure of any C++ program. (5 marks)

## SECTION B

**QUESTION 2 (20 MARKS):**

a) Explain what are variables and constants and how they are declared in C++. (4 marks)

b) What is a pointer? Explain with code examples how to define Pointer Variables in C++. (4 marks)

c) Depending on the programmer the output of a program can be manipulated in different ways. What is a Manipulator? Explain any three types of C++ manipulators. (4 marks)

d) Explain in details any four arithmetic operators available in C++. (4 marks)

e) Write a C++ program explain how the WHILE LOOP is used. (4 marks)

**QUESTION 3 (20 MARKS):**

a) Explain the difference between low-level and high-level programming languages. (4 marks)

b) Write a C++ program to demonstrate the use of the IF statement. (4 marks)

**c)** What is an array? Explain with a C++ code example how to access an array element? (4 marks)

d) All variables used in a program must be declared and their data types specified. Explain any four most commonly used *Data Types* in C++ programming language (4 marks)

e) Explain the output of the following C++ program. (4 marks)

```
#include <iostream.h>
void main()
{
   int a;
   cout << "Input the number:";
   cin >> a;
   if (a>50)
   {
      cout << a;
      a=a+10;
      cout << a;
   }
}
```

**QUESTION 4 (20 MARKS):**

a) Explain in details the concept of objects and classes as used in C++. (4 marks)

b) Write a C++ program to find the circumference. (4 marks)

c) What is an access specifier? Explain three main types of access specifiers used in C++ programming language. (4 marks)

d) Explain the two types of arguments passing used in C++ functions. (4 marks)

1. Passed By Value.
2. Passed By Reference.

e) What is a program? In order to design a good program for a computer and arrive at a desired solution, as a programmer you must determine three basic elements list them. (4 marks)

**QUESTION 5 (20 MARKS):**

a) Being a senior programmer at kabarak. Explain any four features of Object Oriented Programming. (4 marks)

b) Write a C++ program to add the elements of a 2x2 matrix. (4 marks)

c) As a software developer what is a storage class? Explain the three types of storage classes used in C++. (4 marks)

d) Explain in detail how the Increment and Decrement Operators are used in C++ programs. (4 marks)

e) With the help of a code explain how to access C++ class members.(4 marks)