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

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)