

KABARAK



UNIVERSITY

UNIVERSITY EXAMINATIONS

MAIN CAMPUS

FIRST SEMESTER, 2019/2020 ACADEMIC YEAR

EXAMINATION FOR THE BACHELORS OF BUSINESS MANAGEMENT
INFORMATION TECHNOLOGY/BACHELORS OF SCIENCE IN INFORMATION
TECHNOLOGY/BACHELORS OF SCIENCE IN COMPUTER
SECURITY/BACHELORS OF SCIENCE IN COMPUTER SCIENCE/BACHOLER OF
SCIENCE IN ACTUARIAL SCIENCE/BACHELORS OF BUSINESS INFORMATION
TECHNOLOGY.

COMP 215/INTE 215/COMP 211: OBJECT ORIENTED PROGRAMMING WITH C++

STREAM: Y2S1/Y2S2

TIME: 2:00-4:00PM

EXAMINATION SESSION: SEP-DEC

DATE:4/12/2019

VENUE: AUDITORIUM

COPIES: 245

INSTRUCTIONS TO CANDIDATES

- 1. Answer Question 1 and any other two questions in the answer booklet provided.**
- 2. Do not write on your question papers. All rough work should be done in your answer booklet.**
- 3. Clearly indicate which question you are answering.**
- 4. Write neatly and legibly.**
- 5. Check work for language and grammar errors.**
- 6. Follow all the instructions in the answer booklet**



SECTION A: (Compulsory) TOTAL MARKS FOR THIS SECTION IS 30

QUESTION ONE (30 MARKS)

- a) Define the following terms
 - i. Encapsulation (2marks)
 - ii. Polymorphism (2marks)
 - iii. Library function (2marks)
 - iv. Class (2marks)
 - v. Inheritance (2marks)
- b) Discuss the structure of a C++ program (4Marks)
- c) Describe the difference between Procedural programming and Object-Oriented Programming (4Marks)
- d) Discuss the syntax of declaring a class in object-oriented programming (4Marks)
- e) Perform
 - i. Define a user defined function (2marks)
 - ii. Using functions write a program to compute swapping of variable (4Marks)
- f) Attempt the following
 - i. Define string (1marks)
 - ii. Give the syntax for declaring pointers in C++ programming (1marks)

QUESTION TWO (20 MARKS)

- a) Discuss the if... else statement syntax in C++ programming (3marks)
- b) Write a C++ program to compute whether the letter entered by the user is a vowel or not. (6Marks)
- c) Discuss how inheritance concept can be achieved in programming (4Marks)
- d) Write a C++ program to produce the following pattern. (4Marks)

2 4 16 256 65536
- e) Discuss data types in C++ (3marks)

QUESTION THREE (20 MARKS)

- a) Explain relational operators in C++. Give example (2Marks)
- b) Write a program to produce the following output (4marks)
- ```
S S S SS
S S S S
S SS
S S
S
```
- c) Write a computer program to explain call by reference function (4marks)
- d) Explain what you understand by inline functions (4marks)
- e) Write a C++ program to find the sum and average of even numbers between 50 and 100 and display them in descending order using functions. (6marks)

### **QUESTION FOUR (20 MARKS)**

- a) Define array (2marks)
- b) Discuss how a two-dimensional array is initialized (4marks)
- c) Explain the general format of declaring a string in C++ (4marks)
- d) Write a C++ program to join to strings entered by the user (4marks)
- e) Use the values give below and write a program that will compute the sum and average of this values 20, 50, 45, 74, 100, 35. The numbers must be declared and share the same name. (6marks)

### **QUESTION FIVE (20 MARKS)**

- a) Attempt the following questions that follow:
- Pointer (2marks)
  - Address operator (2marks)
- b) Discuss the difference between public, private and protected classes. Give examples (6marks)

- c) Explain the general format for defining a class in C++ (6marks)
- d) Explain the output of the following code extracted from a program written by BBIT student program. (4marks)

```
main()
{
 int x;
 int *ptr1, ptr2;
 x=10;
 ptr1 = &x;
 ptr2 = ptr1;
 cout<< "value of x ="<< x<<endl;
 cout<< "value of ptr1 = "<<ptr1<<endl;
 cout<< "value of ptr2 ="<< ptr2 <<endl;
}
```