

CHUKA



UNIVERSITY

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**UNIVERSITY EXAMINATIONS**

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE OF  
BACHELOR OF ENTREPRENEURSHIP AND ENTERPRISE MANAGEMENT,  
BACHELOR OF COMMERCE**

**BCOM 364: COMPUTER PROGRAMMING 2**

**STREAMS: BCOM Y3S2, BEEM Y2S2**

**TIME: 2 HOURS**

**DAY/DATE: FRIDAY 04/12/2020**

**8.30 AM – 10.30 AM**

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**INSTRUCTIONS:**

- **Answer Question One and any other Two**
- **Do not write on the question paper**

**SECTION A: Answer all questions in this section**

**QUESTION ONE (30 Marks)**

- a) Outline **TWO** ways in which comments can be implemented in C++ programs. (2 Marks)
- b) Outline **FOUR** advantages of Object Oriented Programming. (4 marks)
- c) Differentiate between *derived class* and *base class* as used in OOP. (4 Marks)
- d) Differentiate between a *constant* and a *variable*. (4 Marks)
- e) Write a Student class with one data attribute and two methods and show how it can be used to instantiate an object. (6 Marks)
- f) What are nested member functions? Write program to illustrate nesting of member functions. (6 Marks)
- g) Differentiate between *do....while* and *while loop* control structure. (4 Marks)

**SECTION B (40 MARKS): Answer any two questions out of the three questions. All questions carry Equal marks.**

**QUESTION 2 (20 Marks)**

- a) With the use of appropriate examples, illustrate two ways by which you can pass initial values as arguments to a parameterized constructor when an object is declared. (Use not more than three arguments). (6 Marks)
- b) List any four special characteristics that constructor functions have. (4 Marks)
- c) Differentiate between a constructor and a destructor giving the use for each. (4 Marks)
- d) Differentiate between an object, entity and a class. (6 Marks)

**QUESTION 3 (20 Marks)**

- a) Explain each of the following terms as used in C++ programs: (4 marks)
  - a. Global variable
  - b. Pointers
- b) Write a C++ program that will allow the user to enter a number and determines whether the number is a odd number. The program should then output the number and appropriate remark. (6 Marks)
- c) Write a C++ program that will implement a nested class named display embedded in a class named nest with the following properties:
  - A private data member named S;
  - Public method named add used to determine the sum of 12,10 and 51;
  - Methods named show used to display the sum of the three numbers. (10 Marks)

**QUESTION 4 (20 Marks)**

- a) What is a container? Describe any three containers supported by the STL. (6 Marks)
- b) Outline the task for each of the following member functions of the vector class. (4 Marks)
  - i. at()
  - ii. push\_back()
  - iii. insert()
  - iv. begin()
- c) Write a program that reads the contents of a file (say MyFile.cpp) word by word and puts them into a vector of strings. The program then prints to the screen all the words in the vector each on its line, the total number of words read and then clears all the words from the vector. (10 Marks)

**Question 5 (20 Marks)**

- a) Outline **four** advantages of arrays as used in OOP. (4 Marks)
- b) Write a C++ program that would count down from 100 to 0 in steps of 10.the program should then display the results vertically on the screen. Use **while** loop. (6 Marks)

- c) Write a program that illustrates the use of object arrays. The program should accept the Name, Reg. No and Age of 10 students and store the details in an object array. The program then displays these details on the screen. (10 Marks)
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