

KABARAK



UNIVERSITY

UNIVERSITY EXAMINATIONS

2014/2015 ACADEMIC YEAR

FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE

COMP 215: OBJECT ORIENTED PROGRAMMING

DAY: TUESDAY

DATE: 21/4/2015

TIME: 11:00AM – 1:00PM

STREAM: Y2S2

INSTRUCTIONS:

➤ **QUESTION ONE AND ANY OTHER TWO**

QUESTION ONE 30 MARKS

- a) Using a suitable program describe hybrid inheritance [4 marks]
- b) Explain the scope and inheritance of public, private and protected members of a class. [6 marks]
- c) Using do while loop write a C++ program to add all even numbers between 50 to 350 [4 marks]
- d) Using a suitable example describe user defined data type [4 marks]
- e) Write a C++ program to implement Multilevel inheritance [6 marks]
- f) Write and explain syntax for two dimensional array [4 marks]
- g) Explain the use of this symbol `||` in C++ programming [2marks]

QUESTION TWO 20 MARKS

- a) A shape can be a circle, a square, a rectangle or a triangle. The details stored include the area, the perimeter, the radius (only for a circle), the length (for a square), and the length and the height (for a triangle and a rectangle). The operations performed on a shape include inputting the details of each, computing the area and computing the perimeter.

Required: Write the definition of classes to demonstrate how you can implement this using polymorphism. [10 marks]

- b) (i) What is a constructor? [2 marks]
(ii) State three rules to declare it ? [3 marks]
- c) Write a c++ program to find greatest number between three numbers [5marks]

QUESTION THREE 20 MARKS

- a) Write C++ program to handle exceptions using throw ,catch and try [6 marks]
- b) Using for loop write C++ program to find the sum of numbers between a given range [4 marks]
- c) Using nested else if statement write a C++ program to display the day depending on the choice entered by the user from the key board [5 marks]
- d) Explain the meaning of the following (i) *x
(ii) &x
(iii) x.y [3marks]
- e) State two advantages of object oriented programming [2 marks]

QUESTION FOUR 20 MARKS

- a) Write a program to calculate the monthly telephone bills as per the following rule:
Minimum ksh 200 for upto 100 calls.
Plus ksh. 0.60 per call for next 50 calls.
Plus ksh 0.50 per call for next 50 calls.
Plus ksh 0.40 per call for any call beyond 200 calls. [6 marks]
- b) Explain data abstraction and encapsulation concepts as used in c++ [4 marks]
- c) Write C++ program to find the sum and average of the given numbers, the numbers should be entered from the key board. [4 marks]
- d) Write program to compute simple interest for a given period [3 marks]
- e) What is a copy constructor? When is it used [3 marks]