KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2016/2017 ACADEMIC YEAR
SECOND YEAR, SECOND SEMESTER EXAMINATION
FOR THE DEGREE OF BACHELOR OF SCIENCE
(COMPUTER SCIENCE)

Date: 15th August, 2016.
Time: 8.30am – 10.30am

KCS 208 - COMPUTER PROGRAMMING LANGUAGES

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

a)   Define the following terms as used in computer programming languages;

      i)   Syntax

      ii)   Semantics

      iii)   Type Inference

      iv)   Token

      v)   Lexeme

(10 Marks)

b)   Briefly discuss the phases of Compiler construction.

(6 Marks)

c)   Examine the four ways in which the compiler can recover from errors during the syntactic analysis.

(4 Marks)

d)   Illustrate any three processes involved in Optimizing Compilers.

(6 Marks)

e)   Differentiate name equivalence and structural equivalence.

(4 Marks)

QUESTION TWO (20 MARKS)

a)   Discuss three common features of Imperative programming languages.

(6 Marks)

b)   Differentiate between low level and high level programming languages.

(4 Marks)

c)   List and give an example of the three types of control structures in programming languages.

(6 Marks)

d)   Enumerate any four roles of a Lexical Analyzer.

(4 Marks)

QUESTION THREE (20 MARKS)

a) Define the following terms as used in programming language;

     i)   A compiler

     ii)   The source language

     iii)   The target language

     iv)   An interpreter

                                                                  (8 Marks)

b) Perform the lexical analysis of the following programming statement: Result=old sum-value/100;

                                                                (8 Marks)

c) List any four program components that are usually translated during the intermediate code generation phase.   (4 Marks)

QUESTION FOUR (20 MARKS)

a) Any compiler has some essential requirements, which are perhaps more stringent than for most programs: Discuss any four of such requirements.

                                                (8 Marks)

b) Highlight any four context sensitive questions that the compiler might ask during semantic analysis.

                                                (4 Marks)

c) Illustrate any four issues raised by Typing in Programming languages.

                                                (8 Marks)

QUESTION FIVE (20 MARKS)

a) Highlight any four examples of tokens output during the lexical analysis.

                                                (4 Marks)

b) Analyze the four different semantics that can be applied to the way that argument values are bound to formal parameters.

                                                (8 Marks)

c) Outline any four important qualities of a compiler.

                                                (8 Marks)