KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
FIRST YEAR, FIRST SEMESTER EXAMINATION
FOR THE BACHELOR OF EDUCATION ARTS
KLC 2102 – FUNDAMENTALS OF COMPUTING

Date: 06TH December 2023
Time: 2:30PM – 4:30PM

INSTRUCTIONS TO CANDIDATES
ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS
QUESTION ONE (30 MARKS)

The Engineering Equipment Suppliers (EES) Limited is a supplier of engineering equipment. Customers place sales orders through one of the company's team of salesmen or directly with the company. All customers are sent monthly accounts (invoices are not produced for individual orders). The monthly customer's accounts (500) contain details of charges of all the items supplied during that month plus any outstanding items brought forward from previous months. Each salesman is paid a monthly commission based on the value of the sales orders which he obtained during the month. Sales produced directly with the company are credited to the appropriate salesman. The company places purchase orders with suppliers. Suppliers are paid monthly for the purchase orders only when al the items on a purchase order have been received. The purchase ledger contains 200 accounts and is growing by about 2% per year. The company maintains monthly ledger accounts showing details of supplier accounts, customer accounts and commission due to salesman. Given the functional description of the processes encountered at EES, do the following

a) Explain the following computer files:
   i) Master file
   ii) Sort file
   iii) Transaction file
   iv) Reference file.
   v) Back up files   (5 Marks)
b) Discuss application of computers in schools, government, defense and management.   (6 Marks)
c) List and explain the types of computers as categorized under the cost and size parameters. (6 Marks)
d) State examples of Operating system as stated in fundamentals of computing.   (6 Marks)
e) With an aid of a diagram, explain the computer hardware structure.   (7 Marks)

QUESTION TWO (20 MARKS)
a) Explain the work of the assembler, compiler ad the interpreter.   (6 Marks)
b) Explain two types of network configuration and their various categories of networks according to physical size.   (8 Marks)
c) Explain the four basic topologies clearly stating the failure.   (6 Marks)

QUESTION THREE (20 MARKS)

a) Discuss the five common database models (4 Marks)

b) List and explain two features to be found in a typical database management system (8 Marks)

c) Define data processing modes. Explain various types of data processing modes. (8 Marks)

QUESTION FOUR (20 MARKS)

a) Define the following terms as used in database management
   i) Data redundancy
   ii) Entity relationship (4 Marks)

b) A database is independent of the application that uses it. Discuss the statement (8 Marks)

c) List and briefly describe three advantages of using the database approach in data storage as compared to the file based approach. (8 Marks)

QUESTION FIVE (20 MARKS)

a) Describe the following terms as used in data security:
   i) Data corruption
   ii) Confidentiality
   iii) Copyright (6 Marks)

b) Describe the main ways in which Data Protection Act works. (6 Marks)

c) Explain various way of protecting your computer from physical threats (8 Marks)