CENTRE FOR UNIVERSITY WIDE MODULE

COMPUTER SCIENCE FOR ENGINEERS - EMN1202

INTRODUCTION TO COMPUTERS - EMG1202

INTRODUCTION TO ICT - ESG1110

INTRODUCTION TO INFORMATION TECHNOLOGY - NGE1106/BAC1206/BMA1206

INTRODUCTION TO COMPUTER APPLICATIONS - LCS1105

COMPUTATIONAL THINKING - CMS1211

Final Examination Paper

JUNE 2026

Time allowed: 3 hours

Total Marks: 100 marks

Examiner: MS N Chauke

INSTRUCTIONS

1. This paper contains ONE section with SIX questions.
2. Answer any FIVE questions.
3. Each question carries 20 marks.
4. Where a question contains subdivisions, the mark value of each subdivision is shown in brackets.
5. Illustrate your answer, where appropriate, with clearly labeled diagrams.
6. Started each question on a new page.
7. This paper comprises of 3 printed pages

QUESTION 1

The computer memory is made up of registers

a) Define the terms:
   i) Registers [2]
   ii) Instruction Cycle [4]
   iii) Microprocessor [2]
b) Distinguish between the Mainframe and Mini computers [4]
c) Briefly describe generations of computers from the first generation up-to fourth generation [8]

QUESTION 2

The computer architecture proposed by John Van Neumann is the widely used architecture

a) Define the term *Computer Architecture* [2]
b) Describe the three categories of computer architecture. [12]
c) Convert the following to decimal
   i) FFE2 [2]
   ii) 11111.1011 [2]
   iii) 111111110000101 [2]

QUESTION 3

The operating system in a computer includes a file management system to facilitate use of files.

a) What is a computer file? [2]
b) Briefly explain 5 (five) file operations that a file management system would provide for users and processes. [10]
c) Databases have become part of our lives, explain any 3 (three) uses of databases. [6]
d) State any two disadvantages of a file management system addressed by Databases. [2]

QUESTION 4

The computer can be simplified to be a combination of software and hardware

a) Define the terms Systems Software and Application Software [4]
b) Describe any 4 (four) types of system software [12]
c) What do you understand by the terms *Internet of things (IoT)* and Artificial Intelligence *AI* [4]

QUESTION 5

Computers are prone to be affected by viruses

a) Briefly explain the steps one can take to protect his/her personal computer from viruses. [5]
b) Describe three different types of viruses you are familiar with. [15]

QUESTION 6

In the year 2020 the COVID_19 virus caused the death of many start-up companies due to lockdowns, however the start-ups that survived the lockdowns relied heavily on Information Technology to survive

a) Explain any 3 (three) technologies used by companies and institutions alike to reach their clients during the COVID_19 era. [8]
b) Briefly describe any 4 (four) types of Operating Systems you are familiar with. [12]