



FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

DEPARTMENT OF GEOMATICS AND SURVEYING

INTRODUCTION TO ICT

ESG 1110

Final Examination Paper

November 2024

This examination paper consists of three printed {3} pages

Time Allowed: 3 hours

Total Marks: 100

Examiner's Name: 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. Start each question on a new page.

Question 1

- a) Briefly explain the 3 (three) categories of computer architecture. [10]
- b) In detail explain the instruction cycle. [10]

Question 2

- a) Convert the *binary number* below to its decimal equivalent. [4]

1011011011.111

- b) Convert the *binary coded decimal number* below to its decimal equivalent. [4]

10010110011110000001

- c) Convert the *hexadecimal number* below to its decimal equivalent. [4]

16DF

- d) Convert the following *decimal numbers* to their binary equivalent

(i) 725 [2] (ii)

925.125 [4] (iii)

600 [2]

Question 3

- a) Define the term *system software*. [2]
- b) Briefly discuss the 4 (four) types of Systems Software. [12]
- c) Explain how the blockchain technology works. [6]

Question 4

- a) Information Technology (IT) is being incorporated in almost every aspect of life. Give an account of at-least 4 (four) technologies being incorporated in the education sector. [10]
- b) Explain how the email virus works. [6]
- c) Distinguish between data and information. [4]

Question 5

- a) List any 3 (three) sources of viruses. [3]
- b) Give a detailed explanation of the following terms. [12]
 - (i) Trojan Horse
 - (ii) Malware
 - (iii) Worm
- c) What do you understand by the term *relational database*. [5]

Question 6

- a) Define the term *database management system*. [2]
- b) Explain in detail any 4 types of databases you are familiar with. [16]
- c) Define the term *network topology*. [2]

THE END