ZIMBABWE EZEKIEL GUTI UNIVERSITY

FACULTY OF SCIENCE ,TECHNOLOGY, AGRICULTURE & FOOD SYSTEMS DEVELOPMENT.

DEPARTMENT OF DIGITAL TECHNOLOGY

EXAMINATION PAPER

COURSE CODE	:	CDT404
COURSE TITLE	:	Distributed Systems
SPECIAL REQUIREMENTS	:	None
DURATION	:	3 Hours
LEVEL	:	4.1
DATE	:	May / June 2023

14 APR 2023

INSTRUCTIONS TO CANDIDATES:

1. No cell phones are allowed in the examination venue.
2. Answer all questions from Section A and any 3 questions from Section B.
3. Begin each question on a new page.

SECTION A: Answer all questions.

Question 1

a) Briefly state the evolution of distributed technologies **[5 marks]**

b) Justify how the following are examples of distributed systems

i. Email
ii. Internet
iii. DBMS

[6 marks]

c) Explain goals of distributed systems. **[10 marks]**

d) Explain characteristics of Distributed systems **[5 marks]**

Question 2

a) Give at least 2 examples of applications you utilize daily justify through utilising either definition of distributed systems. **[4 marks]**

b) State at least 3 reasons for distributing systems, and justify **[6 marks]**

c) Like any system, distributed systems have fallacies about them. State at least 4 fallacies. **[4 marks]**

SECTION B Choose 3 questions from this section

Question 3

a) Explain advantages and disadvantages of distributed systems **[10 marks]**

b) Explain at least 5 forms of distributed transparency **[10 marks]**

Question 4

a) Scalability in distributed systems come in different forms, describe any two types of scalability giving challenges associated with the scalabilities **[10 marks]**

b) Discuss why systems are distributed and align these reasons with main concepts of distributed systems **[10 marks]**

Question 5

a) Define and explain what is meant by the term "model" **[2 marks]**

b) Differentiate between architectural models and fundamental models in distributed systems. **[8 marks]**

c) Give any three examples under each of the above models **[10 marks]**

Question 6

a) Through the use of diagrams, explain the difference between normal operation of TCP and transactional TCP **[6 marks]**

b) State any 2 models of communication and explain one **[4 marks]**

c) Illustrate the OSI model and explain what each layer does **[10 marks]**

0/10 Pm