



ZIMBABWE EZEKIEL GUTI UNIVERSITY

FACULTY OF HEALTH, SCIENCE AND TECHNOLOGY

DEPARTMENT OF DIGITAL TECHNOLOGY

EXAMINATION PAPER

COURSE CODE	:	CDT404
COURSE TITLE	:	Distributed Systems
SPECIAL REQUIREMENTS	:	None
DURATION	:	3 Hours
LEVEL	:	4.1
DATE	:	Feb 2022

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INSTRUCTIONS TO CANDIDATES:

1. This paper consists of 2 sections
2. Answer **ALL** Questions in SECTION A and choose 3 in SECTION B.

SECTION A: Answer all questions.

Question 1

- a) Briefly state the evolution of distributed technologies [5]
- b) Justify how the following are examples of distributed systems
 - i. Email
 - ii. Internet
 - iii. DBMS [6]
- c) Explain goals of distributed systems. [10]
- d) Explain characteristics of Distributed systems [5]

Question 2

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

- b) State at least 3 reasons for distributing systems, and justify [6]
- c) Like any system, distributed systems have fallacies about them. State at least 4 fallacies. [4]

SECTION B Choose 3 questions from this section

Question 3

- a) Explain advantages and disadvantages of distributed systems [10]
- b) Explain at least 5 forms of distributed transparency [10]

Question 4

- a) Scalability in distributed systems come in different forms, describe any two types of scalability giving challenges associated with the scalabilities [10]
- b) Discuss why systems are distributed and align these reasons with main concepts of distributed systems [10]

Question 5

- a) Define and explain what is meant by the term "model" [2]
- b) Differentiate between architectural models and fundamental models in distributed systems. [8]
- c) Give any three examples under each of the above models [10]

Question 6

- a) Through the use of diagrams, explain the difference between normal operation of TCP and transactional TCP [6]
- b) State any 2 models of communication and explain one [4]
- c) Illustrate the OSI model and explain what each layer does [10]