



ZIMBABWE EZEKIEL GUTI UNIVERSITY

FACULTY OF HEALTH, SCIENCE AND TECHNOLOGY

DEPARTMENT OF DIGITAL TECHNOLOGY

EXAMINATION PAPER

COURSE CODE : CDT 404
COURSE TITLE : DISTRIBUTED SYSTEMS
SPECIAL REQUIREMENTS : None
DURATION : 3 Hours
LEVEL : 1.2
DATE : June /July 2022

04 JUN 2022

04 JUL 2022

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 from this section

1. Briefly state the evolution of distributed technologies [10 marks]
 2. Illustrate the OSI model and explain what each layer does [10 marks]
 3. Differentiate between architectural models and fundamental models in distributed systems. Give any three examples under each of the above models [10 marks]
 4. What purpose does the concurrency control algorithm serve and explain how it performs its function? [10 marks]
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SECTION B: Answer ANY 3 questions from this section.

5. Through the use of diagrams, explain the difference between normal operation of TCP and transactional TCP [20 marks]
6. Justify how the following are examples of distributed systems
 - a. Intranet
 - b. Mobile and ubiquitous computing
 - c. email
 - d. Internet
 - e. DBMS [20 marks]
7. Differentiate between omission, arbitrary and timing failures and name at least 3 of each. [20 marks]
8. Discuss centralized, distributed and token ring algorithms, stating clearly messages per entry/exit, delay before entry and problems encountered by each [20 marks]