



[Knowledge for Development]

KIBABII UNIVERSITY

[KIBU]

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

**SPECIAL/SUPPLEMENTARY EXAMINATIONS
YEAR FOUR SEMESTER ONE EXAMINATIONS**

**FOR THE DEGREE IN
BACHELOR OF SCIENCE IN INFORMATION
TECHNOLOGY**

**COURSE CODE : BIT 417
COURSE TITLE : DISTRIBUTED SYSTEMS**

DATE: 18/11/2022

TIME: 8:00 A.M – 10:00 A.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE [COMPULSORY] [30 MARKS]

- a. Differentiate between access transparency and concurrency transparency [4 Marks]
- b. Explain the following levels used to describe Distributed system reference model
 - a. Based on components [1 Mark]
 - b. Based on functions [1 Mark]
 - c. Based on Data [1 Mark]
- c. Name and explain any four types of transparencies a distributed system should provide. [8 Marks]
- d. Describe a Network operating system and give two advantages and two disadvantages of using it to implement distributed systems. [5marks]
- e. Discuss issues of distributed systems. [10 Marks]

QUESTION TWO [20 MARKS]

- a. State and explain any three types of distributed systems [6marks]
- b. Discuss 5 Major factors an organization needs to consider in order to choose between using a Network operating system or standard data exchange language to implement its distributed system. [10 Marks]
- c. Describe client/server architecture and give two of its limitations [4 Marks]

QUESTION THREE [20 MARKS]

- a. Explain six ways in which a designing a distributed application differs from a non-distributed application. [6 Marks]
- b. Explain the following factors considered in design of distributed databases
 - i. Autonomy [2 Marks]
 - ii. Distribution [1 Mark]
 - iii. Heterogeneity. [2 Marks]
- c. Discuss five advantages and two disadvantages of using Distributed object architecture over Web based application architectures [7 Marks]
- d. Name two types of applications implemented using Peer to Peer architectures and give a reason why it's a good way to implement them [2 Marks]

QUESTION FOUR [20 MARKS]

- a. Describe peer to peer architectures and discuss two of their limitations. [4 Marks]
- b. Using a diagram describe the distributed system architecture [10 Marks]
- c. Discuss three issues considered in designing a distributed File system and how they have been implemented in Suns Network File System [6 Marks]

QUESTION FIVE [20 MARKS]

- a. Discuss the Eight fallacies of distributed computing. [14 Marks]
- b. Discuss four issues considered in developing Directory interfacing protocols such as LDAP. [6 Marks]