(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR

SPECIAL/SUPPLEMENTARY EXAMINATIONS
YEAR FOUR SEMESTER ONE EXAMINATIONS

FOR THE DEGREE OF
BACHELOR OF COMPUTER SCIENCE

COURSE CODE   :   CSC 410

COURSE TITLE   :   DISTRIBUTED SYSTEMS

DATE: 07/01/2021   TIME: 08:00 A.M – 10 :00 A.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO

QUESTION ONE [COMPULSORY] [30 MARKS]

a) Explain the following terms as used in Language Support in Distributed systems

    i.   Partitioning   [2 marks]

    ii.   Configuration   [2 marks]

    iii.   Allocation   [2 marks]

    iv.   Transparent execution   [2 marks]

    v.   Reconfiguration   [2 marks]

b) Explain the RPC message procedure   [4 marks]

c) Explain the five types of RPC Remote Procedure Call   [5 marks]

c) Briefly explain some common stream oriented communication characteristics   [5 marks]

e) What is an Entity in Distributed systems?   [2 marks]

f) What is a Name in Distributed Systems?   [2 marks]

g) Explain the Ring Algorithm   [2 marks]

QUESTION TWO [20 MARKS]

a) Explain the six functions of a middleware as used in Distributed systems   [6 marks]

b) Explain the Bully Algorithm as used in Distributed systems   [2 marks]

c) Distributed computing environments are heterogeneous Explain   [5 marks]

d) Discuss the Peer 2 Peer Motivations   [7 marks]

QUESTION THREE [20 MARKS]

a. Explain, Name Spaces as used in Distributed systems [2 marks]

b. Discuss the benefits and problems of **CORBA** as used in distributed systems [10 marks]

c. Name and explain the three properties of a true identifier used to uniquely identify an entity

[6 marks]

d. Discuss the goal of mutual exclusion in distributed systems [2 marks]

QUESTION FOUR [20 MARKS]

a) Discuss the five issues in Peer-to-Peer network [10 marks]

b) Give two advantages and two disadvantages of Remote procedure call [4 marks]

c) In distributed systems, many of the algorithms that have been used are typically not

completely symmetrical, and some process has to take the lead in initiating the algorithm

[6 marks]

explain these processes

QUESTION FIVE [20 MARKS]

a) Explain the Eight Fallacies of distributed systems [10 marks]

b) What is the function of Election algorithms in distributed systems? [2 marks]

c) Define Stream oriented communication as used in Distributed systems [2 marks]

d) Differentiate between Flat transaction and Nested transactions [4 marks]

e) The name of an access point is an address, give two examples [2 marks]