THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY
(BSC IT JAN 12)

ICS 2208: OPERATING SYSTEMS II

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: MAY/JUNE 2012
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer Booklet*

This paper consist of **FIVE** questions
Answer any **THREE** questions. Question **ONE** is Compulsory
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages

SECTION A (Compulsory - 20 marks)

Question One (20 Marks)

a) Define the following terms as used in distributed system
    i) Middleware
    ii) Marshalling
    iii) Process   (6 marks)

b) Enumerate and explain three aspects of transparency   (6 marks)

c) Explain **TWO** examples of distributed systems   (4 marks)

d) Briefly explain **THREE** methods of handling deadlocks in distributed systems   (6 marks)

e) Explain FOUR reasons for Process Migration   (8 marks)

SECTION B (Answer any TWO questions – 40 Marks)

Question Two (20 marks)

With the aid of diagram, describe the Remote Procedure call steps   (20 marks)

Question Three (20 marks)

a) Briefly explain the happened-before algorithm   (6 marks)
b) Consider a system consisting of processes P1, P2, P3 and P4. Suppose that processes P2, P3 and P4 want to enter their critical sections. The following are their timestamps: P_1(TS = 6), P_2(TS = 3), P_3(TS = 9) and P4(TS=8). Using an illustration, explain the algorithm for implementing mutual exclusion.   (14 marks)

Question Four (20 marks)

Describe CORBA as a standard and explain how it manages communication between distributed objects   (20 marks)

Question Five (20 marks)

Discuss the features of a Distributed file system   (20 marks)