# TECHNICAL UNIVERSITY OF MOMBASA

INSTITUTE OF COMPUTING AND INFORMATICS

Select department

## UNIVERSITY EXAMINATION FOR:

BSIT/SEP2016/J-FT

ICS 2208: OPERATING SYSTEMS II

SPECIAL/SUPPLEMENTARY EXAMINATION

**SERIES:** SEPTEMBER 2018

**TIME:** 2HOURS

**DATE:** Sep2018

**Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **FIVE** questions. Attemptquestion ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

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**Question ONE**

a) Explain the following terms as they apply to distributed computer Operating systems

(i)Distributed Operating System (3marks)
(ii) Address space (3marks)
(iii) Asynchronous Operation (3marks)
(iv) Demand paging (3marks)
(v) prepaging (3marks)
(vi) Crirtical Section (3marks)
(vii) Deadlock (3marks)

b)Using a diagram outline the logical view of how the middleware enables realize distributed client server/server computing (9 marks)

**Question TWO**

a) Explain the elements to consider in the design of distributed Operating system for each of the following system components

i) Process Management ( 4 marks)
ii) Communication (4marks)
iii) File Systems (4 marks)

b) Explain the advantages of Remote procedure call over direct network I/O (8 marks)

**Question THREE**

a) Explain the concept of critical section in distributed operating system (2 marks)
b) Explain the System Model for distributed (15 marks)
c) Explain how deadlock can occur in distributed system (3 marks)

**Question FOUR**

a) Briefly explain five resource allocation policies in distributed operating system (10 marks)
b) Explain the following classes of client –server applications
   (i) host base processing ( 2 marks)
   (ii) server based processing ( 2 marks)
   (iii) cooperative processing ( 2 marks)
   (iv) client-based processing ( 2 marks)
c) Explain the meaning of process image (2marks)

**Question FIVE**

a) Explain the elements used in implementation mechanism of remote procedure call (10 marks)
b) Explain the procedure call process (10 marks)