THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
DIPLOMA IN INFORMATION TECHNOLOGY
(DICT J12EV/DIT J12EV)

ECT 2105/EIT 2109: PRINCIPLES OF OPERATING SYSTEM

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: OCTOBER 2012
TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consist of **FIVE** questions

Answer question **ONE** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question One (20 marks)

a) Define operating system. **(2 marks)**
b) State and describe the types of operating system. **(4 marks)**
c) State and describe the **THREE** categories of files. **(6 marks)**
d) State the memory management functions. **(4 marks)**
e) State the advantages and disadvantages of fixed partition. **(4 marks)**

SECTION B (Answer Any Two Questions)

Question Two (20 marks)

a) State the goals of operating system. **(4 marks)**
b) Why would shortest job first scheduling algorithm not be preferred to first come first served scheduling algorithm? **(3 marks)**
c) State and describe the different ways of recovering from deadlock. **(6 marks)**
d) Define compaction and state its advantage. **(3 marks)**
e) Briefly describe the monoprogramming concept. **(4 marks)**

Question Three (20 marks)

a) State and describe the techniques used in memory management. **(10 marks)**

b) Differentiate between pages and frames. **(2 marks)**

c) Give the disadvantages of monoprogramming concept. **(4 marks)**

Question Four (20 marks)

a) Differentiate between status registers and controller registers. **(4 marks)**
b) Use diagram to illustrate how the processor give commands and data to controller to accomplish an 1/0 transfer. **(6 marks)**

c) Describe the following types of file organization. **(6 marks)**
i) Serial files
ii) Sequential files
iii) Random/Direct files

d) Define deadlock. **(2 marks)**

e) Describe how best fit strategy works in memory management. **(2 marks)**

Question Five (20 marks)

a) Describe the different ways of preventing the conditions for deadlock. **(8 marks)**
b) Differentiate between first-fit and worst –fit. **(2 marks)**
c) Briefly explain the concept of virtual memory. **(4 marks)**
d) Describe the significance of managing processors. **(2 marks)**
e) State the benefits of multiprogramming concept. **(4 marks)**