TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
(DICT 13M)

ECS 2106: OPERATING SYSTEMS

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2013
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions. Attempt 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

Question One (Compulsory)

a) Define the following operating system terms **(10 marks)**

- **(i)** Operating system
- **(ii)** Process
- **(iii)** Interrupt
- **(iv)** System overhead
- **(v)** Spooling

b) List THREE benefits of multi programming **(3 marks)**

c) Differentiate between a long term scheduler and a short term scheduler **(4 marks)**

d) Explain the monolithic structure of OS **(3 marks)**

e) Given the following

Process	AT	Burst Time
P_1	0	53
P_2	0	17
P_3	20	68
P_4	21	24

Calculate the average wait time using the SJFS and round robin scheduling algorithms. Assume that a quantum of 20 is being used. **(10 marks)**

Question Two

a) Name and explain THREE types of a OS structures **(6 marks)**

b) Differentiate between pre-emptive and non-preemptive scheduling **(4 marks)**

c) Explain swapping in memory management **(5 marks)**

Question Three

a) Explain FOUR conditions for deadlock **(8 marks)**

b) Explain THREE types of file organization **(6 marks)**

c) List and explain FOUR scheduling objectives **(4 marks)**

Question Four

a) Explain the concept of compaction in memory management, using a diagram **(5 marks)**

b) Explain THREE types of file organization **(6 marks)**

c) List and explain FOUR scheduling objectives **(4 marks)**

Question Five

a) Explain THREE memory allocation algorithm **(6 marks)**

b) Differentiate between a device controller and a device manager **(4 marks)**

c) Explain between a device controller and a device manager **(4 marks)**

d) Explain the segmentation in memory management **(5 marks)**