

**W1-2-60-1-6**

## JOMO KENYATTA UNIVERSITY

**OF AGRICULTURE AND TECHNOLOGY**

# University Examinations 2016/2017

**YEAR ONE SEMESTER TWO EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY**

**ICS 2202: COMPUTER OPERATING SYSTEM**

**DATE: APRIL 2017 TIME: 2 HOURS**

**QUESTION ONE (COMPULSORY 30 MARKS)**

a) Explain the meaning of the following terms (10 marks)

i) Multi programming

ii) Dead lock

iii) Mutual exclusion

iv) Remote procedure call

v) Buffer overflow

b) List any five operations that can be carried out on a file (5 marks)

c) Distinguish between internal fragmentation and external fragmentation (4 marks)

d) Explain what swapping means and state its importance (5 marks)

e) Describe any three types of scheduling (6 marks)

**QUESTION TWO (20 MARKS)**

a) Define process spawning (2 marks)

b) Differentiate between a process and a thread (2 marks)

c) State any three reasons for process termination (6 marks)

d) Describe the process lifecycle (10 marks)

**QUESTION THREE (20 MARKS)**

a) Define starvation (2 marks)

b) Distinguish between a page and a frame (4 marks)

c) Explain the conditions necessary and sufficient to produce a deadlock (8 marks)

d) Explain any three methods of deadlock prevention (6 marks)

**QUESTION FOUR (20 MARKS)**

a) Define TURNAROUND TIME (2 marks)

b) Distinguish between preemptive and non preemptive scheduling

(6 marks)

c) A process scheduler schedules different processes to be assigned to the CPU based on particular scheduling algorithms. Describe any four scheduling algorithms (12 marks)

**QUESTION FIVE (20 MARKS)**

a) Outline any five functions of the operating system (5 marks)

b) Discuss any five threats against the operating system or computer

(15 marks)