



**JARAMOGI OGINGA ODINGA UNIVERSITY
OF SCIENCE & TECHNOLOGY
UNIVERSITY EXAMINATIONS 2012/2013
2ND YEAR 1ST SEMESTER EXAMINATION FOR THE DEGREE
OF BACHELOR OF SCIENCE (COMPUTER SECURITY AND
AUDIT)
(KISUMU L.CENTRE)**

COURSE CODE: IIT 3211

COURSE TITLE: OPERATING SYSTEMS

DATE: 12/8/2013

TIME: 9.00-11.00 AM

DURATION: 2 HOURS

INSTRUCTIONS

- 1. This paper consists of 5 Questions.**
- 2. Answer Question 1 (Compulsory) and any other 2 questions.**
- 3. Write your answers on the answer booklet provided.**

QUESTION ONE 30marks

- a) Define the following terms as used in operating system
- i. System call (2 Marks)
 - ii. A Process (2 Marks)
 - iii. A program (2 Marks)
 - iv. Dynamic Loading (2 Marks)
 - v. Paging (2 Marks)
 - vi. Segmentation (2 Marks)
- b) Describe the different categories of system calls using suitable examples in each case (10 Marks)
- c) Differentiate between internal fragmentation and external fragmentation. (8 Marks)

QUESTION TWO 20marks

- a) Differentiate between deadlock avoidance and deadlock prevention. (8 Marks)
- b) List **THREE** types of schedulers (6 Marks)
- c) Describe the action taken by a thread library to context switch between fibers. (6 Marks)

QUESTION THREE 20marks

- a) State the functions of a memory manager (8 Marks)
- b) Describe how user address space loaded in one partition of memory protected from others. (6 Marks)
- c) Distinguish between a thread and a process . (6 Marks)

QUESTION FOUR 20marks

- a) Discuss various process scheduling policies with their cons and pros. (10 Marks)
- b) List the **FIVE** states of a process. (5 Marks)
- c) Describe how Kerberos as a security control in a system. (5 Marks)

QUESTION FIVE 20marks

- a) Describe a process control block . (10 Marks)
- b) Highlight the advantages of user level thread over Kernel level thread. (10 Marks)