



# MURANG'A UNIVERSITY COLLEGE

*(A constituent college of Jomo Kenyatta University of Agriculture and Technology)*

UNIVERSITY EXAMINATIONS 2014/2015

YEAR ONE SEMESTER TWO SPECIAL/SUPPLEMENTARY EXAMINATION FOR  
THE DIPLOMA IN INFORMATION TECHNOLOGY

SCI 0105 OPERATING SYSTEM

COURSE: DIT

TIME: 2HRS

DAY/TIME: Wednesday 8:30am-11:30am

DATE: 28<sup>th</sup> October 2015

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**INSTRUCTIONS:** *Answer question one and any other two questions*

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**Question One (30 marks)**

- a. Define the following terminologies as used in operating system
  - i. Operating system
  - ii. System call
  - iii. Kernel
  - iv. Process
  - v. Multiprocessing (5 marks)
- b. With aid of a diagrams differentiate monolithic and layered structure of operating system (6 marks)
- c. Distinguish between command language and job control language (4 marks)
- d. Explain five reasons for process termination. (8 marks)
- e. With aid of a diagram explain the five state process model (7 marks)

**Question Two (20 marks)**

- a. i) Define deadlock
- ii) Explain three causes of deadlock. (8marks)
- b. Differentiate between shortest job first and First-Come-First-Served (6 marks)
- c. Describe three memory placement policies (6 marks)

**Question Three (20 marks)**

- a. Describe four objectives of process scheduling (8 marks)
- b. Define process control block and list four items it stores (4 marks)
- c. Distinguish between (8 marks)
  - i. Device driver and device controller
  - ii. Internal fragmentation and external fragmentation

**Question Four (20 marks)**

- a. Differentiate between segmentation and paging (6marks)
- b. Explain four attributes of a file. (4 marks)
- c. State the function of the following commands used in MS-DOS (4 marks)
  - i. cd
  - ii. mkdir
  - iii. rmdir
  - iv. cls
- d. Explain three objectives of I/O device management (6 marks)