KISII UNIVERSITY
UNIVERSITY EXAMINATIONS
FIRST YEAR EXAMINATION FOR THE AWARD OF THE CERTIFICATE IN INFORMATION TECHNOLOGY

SECOND SEMESTER 2023/2024
[JAN – APRIL, 2024]

CIT 0111: OPERATING SYSTEMS

STREAM: Y1 S2   **TIME: 2 HOURS**

DAY: TUESDAY, 3:00 - 5:00 P.M.   **DATE: 23/04/2024**

INSTRUCTIONS

1. *Do not write anything on this question paper.*
2. *Answer question ONE (Compulsory) and any other THREE questions.*

QUESTION ONE (30 MARKS)

a) Describe **five** functions of an operating system?   (10 marks)

b) Discuss the following types of operating system.   (12 marks)

   i.   Multitasking operating system
   ii.   Multi-processor operating system
   iii.   Real time-based operating system
   iv.   Batch operating system
   v.   Interactive Operating system
   vi.   Time sharing operating system

c) Joseph intends to acquire an operating system for his company's network system, explain three factors he should consider.   (5 marks)

d) Explain two types of system software   (3 marks)

QUESTION TWO (20 MARKS)

a) With the aid of a well labelled diagram, describe how an operating system provides services to process and the user   (6 marks)

b) Distinguish between multiprocessing operating system and multiprogramming operating system.   (6 marks)

c). List five functions of operating systems.   (5 marks)

d). State three examples of the operating system software   (3 marks)

QUESTION THREE (20 MARKS)

a) With an aid of a diagram, describe a five-state model in reference to process states.   (8marks)

b) What is the state of the processor, when a process is waiting for some event to occur?   (3marks)

c) Describe two main reasons why a process can be terminated.   (6 marks)

d) List three services provided by operating system to process   (3 marks)

QUESTION FOUR (20 MARKS)

 a). What do you understand by the term inter-process communication?
                                    (3 marks)

  b) state four reasons for process co-operation   (4 marks)

c) With the aid of a diagram describe the two models of inter-process communication.   (8 marks)

QUESTION FIVE (20 MARKS)

a) Describe two roles of operating system in a computer system.   (6 marks)

b) Explain two ways through which an Operating system manages resources.
                                    (4 marks)

b) Explain three properties of an Operating System   (6 marks)

c) Differentiate between application software and system software. (4marks)