



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF APPLIED SCIENCES
DEPARTMENT OF COMPUTER SCIENCE
OPERATING SYSTEM
SCS1103

Final Examination Paper

November 2024

This examination paper consists of 3 pages

Time Allowed: 3 hours
Total Marks: 100
Examiner's Name: Mrs. N. Marabada
External Examiner: Dr C Gorimbo

INSTRUCTIONS

1. Answer any four (4) questions
2. Each question carries 25 marks

MARK ALLOCATION

QUESTION	MARKS
1.	25
2.	25
3.	25
4.	25
5.	25
TOTAL	100

QUESTION ONE

- a) Explain the three main purposes of an operating system? [6]
b) Discuss the methods for handling deadlocks [9]
c) Describe the advantages and disadvantages of peer-to-peer systems over client-server systems? [10]

QUESTION TWO

- a) Describe SPOOLING [4]
b) What are the benefits of Multithreaded programming [5]
c) Explain the concept of paging in detail [16]

QUESTION THREE

a) Describe in detail the following:

- i) FCFS [5]
ii) SJF [5]
iii) Round Robin [5]

b) For the Processes table below, calculate the average waiting time for the algorithms:

- First Come First Serve (FCFS)
- Shortest Job First (SJF) and
- Priority Scheduling

Process Burst Time Priority

P1	10	3
P2	1	1
P3	2	4
P4	1	5
P5	5	2

[10]

QUESTION FOUR

- a) What is the difference between a job and a process in operating systems? [5]
- b) Explain what multiprogramming is and give 5 advantages of multiprogramming. [10]
- c) i. What is a process scheduled? [2]
- ii. Explain the characteristics of a good process scheduler and what criteria affects the scheduler's performance. [8]

QUESTION FIVE

- a) i. Explain pseudo parallelism? [2]
- ii. Describe the process model that makes parallelism easier to deal with. [8]
- b) Operating systems frequently exploit locality to improve performance. Briefly describe three examples where operating systems do so, and state how locality is exploited. [15]