



UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE AWARD OF THE DIPLOMA IN INFORMATION TECHNOLOGY

SECOND SEMESTER 2023/2024

[JAN – APRIL, 2024]

DIT 0107: OPERATING SYSTEMS

STREAM: Y1 S2

TIME: 2 HOURS

DAY: FRIDAY, 12:00 - 2:00 P.M.

DATE: 19/04/2024

INSTRUCTIONS

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

- 1.i) What does Operating System mean as used in computing?
(2 marks)
 - ii) List some 8 Oss that have and are in the computing world. (8 Marks)
 - iii) Discuss the difference between windows OS and Linux; in each case give TWO advantages and TWO demerits. (5 Marks)
 - iv) Enumerate TEN vital functions of an OS in a computing environment. (10Marks)
- 2a) Differentiate between the following in regard to the activities of Oss
- i. Memory management and processor management (2 Marks)
 - ii. Device management and File management (2 Marks)
- b) Briefly describe the following operating System types
- i. Batch O/S
 - ii. Time-sharing operating System
 - iii. Distributed operating System
 - iv. Network operating System

- v. Real-Time operating System (Hard and Soft) (10 Marks)
- vi. What is spooling and why is it important? (1 Mark)
- 3. What is the difference between process and program? (2 Marks)
 - i. What does it mean to preempt a process? (2Marks)
 - ii. What is swapping and why is it vital? (3 Marks)
 - iii. List four characteristics of suspended processes. (4 Marks)
 - iv. Give three examples of an interrupt (3 Marks)
 - v. What are the steps performed by O/S to create new processes? (3 Marks)
- 4. What is process scheduling? (3 marks)
 - i. Explain the difference between the following scheduling algorithms.
 - a. First-Come, First-Served (FCFS) scheduling and shortest-job-Next (SJN) scheduling
 - b. Priority scheduling and shortest remaining time (4 Marks)
 - c. Round Robin (RR) scheduling and multiple- level queues scheduling (4 Marks)
- 5. Enumerate the differences between processes and threads (10 Marks)
 - i. Give 2 advantages of threads (2 Marks)
 - ii. Identify 3 program threats (3 Marks)