

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2023**

OPERATING SYSTEMS

[Maximum Marks: 100]

[Time: 3 Hours]

PART-A

[Maximum Marks: 10]

I. (Answer **all** questions in one or two sentences. Each question carries 2 marks)

1. Define an OS from user view.
2. Define race condition.
3. List two address binding schemes.
4. Define external fragmentation.
5. Define virtualization.

(5 x 2 = 10)

PART-B

[Maximum Marks: 30]

II. (Answer **any five** of the following questions. Each question carries 6 marks)

1. Explain the concept of multiprogramming OS.
2. Discuss the difference between Linux and Windows OS.
3. Discuss Process Control Block and its structure.
4. Explain short term, long term and medium term schedulers.
5. Explain the concept of thrashing.
6. Discuss the limitations of virtualization.
7. List the various file operations.

(5 x 6 = 30)

PART-C

[Maximum Marks: 60]

(Answer **one** full question from each Unit. Each full question carries 15 marks)

UNIT – I

- III. a. Discuss the features of UNIX operating system. (7)
- b. Explain batch system and real time system. (8)

OR

- IV. a. Write short notes on assembler, compiler and interpreter. (7)
- b. Discuss the main memory management and file management system of the OS. (8)

UNIT – II

- V. a. List the critical section problems and explain its solutions. (9)
- b. Explain deadlock and its causes. (6)

OR

- VI. a. Briefly explain the difference between preemptive and non-preemptive scheduling. (3)
- b. Explain FCFS, SJF and priority scheduling algorithms with examples to illustrate. (12)

UNIT- III

- VII. a. Explain the paging hardware with diagram. (10)
- b. Differentiate between paging and segmentation. (5)

OR

- VIII. a. Explain the concepts of page-replacement. (8)
- b. Explain demand paging. (7)

UNIT - IV

- IX. a. Describe the various file allocation methods. (9)
- b. Explain in brief hardware and software virtualization. (6)

OR

- X. a. Explain in detail the three types of directory structures. (9)
- b. Discuss the features of Vmware. (6)
