

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE, APRIL - 2025**

**OPERATING SYSTEMS**

[Maximum marks: 100]

[Time: 3 Hours]

**PART – A**

**Maximum marks: 10**

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

1. List any two examples for system software.
2. Name the types of real time operating systems.
3. Define process.
4. List any two address binding schemes.
5. Define thin client.

(5 x 2 = 10)

**PART – B**

**Maximum marks: 30**

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

1. Briefly explain the characteristics and types of multiprocessing operating systems.
2. Explain the use of PCB and its components.
3. List and explain the characteristics of deadlock.
4. Explain first fit, best fit and worst fit strategies for dynamic memory allocation.
5. Explain virtual memory.
6. Explain any three file operations.
7. Explain any two file allocation methods.

(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) Describe the features of batch OS and multi programming OS. (10)
- (b) Explain the functions of assembler. (5)

**OR**

- IV.** (a) Explain general functions of an operating systems. (10)  
(b) Explain the features of Unix operating systems. (5)

**UNIT - II**

- V.** (a) Draw the Gantt chart and find the average waiting time for the following Processes in (i) SJF (ii) FCFS (10)

Process	Burst time
P1	6
P2	8
P3	7
P4	3

- (b) Explain resource allocation graph. (5)

**OR**

- VI.** (a) Explain multilevel queue and multilevel feedback queue scheduling. (10)  
(b) Explain priority scheduling. (5)

**UNIT - III**

- VII.** (a) Explain the steps in handling page faults with the help of a diagram. (10)  
(b) Differentiate between external and internal fragmentation. (5)

**OR**

- VIII.** (a) Explain paging and paging hardware with the help of a diagram. (10)  
(b) Explain optimal page replacement algorithm. (5)

**UNIT - IV**

- IX.** Explain single level, two level and tree structured directories. (15)

**OR**

- X.** (a) Explain sequential and indexed file organisations. (10)  
(b) Explain virtualisation. (5)

-----