

UNIT - I

2. (a) Difference between multiprogramming and multitasking operating system. 5
(b) What is an operating system and its functions ? Explain the functions and services of operating systems. 10
3. (a) Write short notes on: Short term scheduler and Dispatcher. 5
(b) What do you understand by CPU Scheduling ? What are scheduling criteria for FCFS, SJF and SRTF ? 10

UNIT - II

4. (a) What is Deadlock ? Explain various methods for detection, prevention, and recovery of deadlocks. 10
(b) How to avoid deadlocks ? Explain Banker's algorithm briefly. 5
5. (a) What is Interprocess communication (IPC) ? Explain Dining Philosopher IPC Problem in detail. 8
(b) What is Semaphore ? Explain counting and binary semaphore in detail. 7

UNIT - III

6. (a) Explain the concept of virtual memory and how it is obtained by demand paging and segmentation ? 10
(b) What is Fragmentation ? Explain difference between Internal and External fragmentation briefly. 5
7. Explain the following : 15
(a) Optimal Page Replacement and Least Recently used (LRU)
(b) Demand Paging

UNIT - IV

8. (a) Explain the concept of booting from disk and bad block recovery in disk management. 10
(b) Briefly describe various access methods of file system. 5
9. (a) Explain architecture of Windows operating system in detail. 7
(b) Describe any *two* disk scheduling algorithms with the help of example. 8

Roll No.

3087

**B. Tech. 4th Semester (CSE)
Examination – May, 2023**

OPERATING SYSTEM

Paper : PCC-CSE-206-G

Time : Three hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *five* questions in all, selecting *one* question from each Unit. Question No. **1** is *compulsory*. All questions carry equal marks.

1. Explain the following briefly:
 - (a) Differentiate between paging and segmentation.
 - (b) Difference between process and program.
 - (c) What is the main purpose of system calls and system program ?
 - (d) Explain process state transition diagram.
 - (e) Difference between contiguous and noncontiguous memory allocation.
 - (f) Difference between long-term scheduler and short-term scheduler. 2.5 × 6 = 15

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