

# CBCS SCHEME

17EC553



Fifth Semester B.E. Degree Examination, June/July 2023

## Operating System

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Define Operating System. Explain the key concern of the OS? (10 Marks)
- b. Explain various resource allocation techniques. (10 Marks)

OR

- 2 a. Explain the key features of different classes of operating system. (10 Marks)
- b. Explain different computational structures in an operating system. (10 Marks)

### Module-2

- 3 a. Define process. Explain Process Control Block. (10 Marks)
- b. Explain process States and Transitions. (10 Marks)

OR

- 4 a. Explain the definition and implementation of Thread. (08 Marks)
- b. Explain the difference between preemptive and non-preemptive scheduling. (06 Marks)
- c. Perform FCFS scheduling and find average turnaround time, average weighted turnaround time of given set of processes.

Process	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	P <sub>4</sub>	P <sub>5</sub>
Arrival time	0	2	3	5	9
Service Time	3	3	2	5	3

(06 Marks)

### Module-3

- 5 a. Explain contiguous memory allocation technique? (10 Marks)
- b. Explain the concept of paging. (10 Marks)

OR

- 6 a. Explain virtual memory handler. (10 Marks)
- b. Explain FIFO and LRU page replacement policy with the help of an example. (10 Marks)

### Module-4

- 7 a. Explain File System and I/Os. (10 Marks)
- b. Explain various file organization. (10 Marks)

OR

- 8 a. Explain the interface between file system and I/Os. (10 Marks)
- b. Discuss various methods of allocation of disk space with appropriate diagrams. (10 Marks)

### Module-5

- 9 a. Explain implementation of message passing. (10 Marks)
- b. Explain mailbox and its advantages. (10 Marks)

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OR

- 10 a. Define Deadlock. Explain deadlocks in resource allocation. (10 Marks)
- b. Explain deadlock detection algorithm. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.