



CBCS SCHEME

18EC641

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Sixth Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026 Operating System

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain the goal of an operating system, its operation and resource allocation of O.S. (10 Marks)
- b. Discuss the common tasks performed by an operating system. (06 Marks)
- c. Explain the functions of an O.S. (04 Marks)

OR

- 2 a. Explain briefly the key feature of different classes of operating systems. (10 Marks)
- b. Explain the features and special technique of distributed O.S. (10 Marks)

Module-2

- 3 a. Explain the four fundamental states of a process with state transition diagram. (10 Marks)
- b. What are the advantages of threads over process? Explain Kernel level threads. (10 Marks)

OR

- 4 a. Explain the operation of preemptive scheduling policies (RR and LCM) and its performance for the data given below :

Process	P ₁	P ₂	P ₃	P ₄	P ₅
Arrival time	0	2	3	5	9
Service time	3	3	2	5	3

(12 Marks)

- b. Explain briefly scheduling in UNIX. (08 Marks)

Module-3

- 5 a. Compare the contiguous and non-contiguous memory allocation. (08 Marks)
- b. Explain the important concept is the operation of demand paging. (12 Marks)

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OR

- 6 a. How virtual memory can be implemented? (10 Marks)
- b. What is memory fragmentation? Discuss the method of memory compaction and reuse of memory concepts to overcome the problem of memory fragmentation give examples. (10 Marks)

Module-4

- 7 a. What are the facilities provided by the file system and the i/p-o/p control system? (10 Marks)
- b. With a figure explain the working of a linked allocation of disk space. (10 Marks)

OR

- 8 a. Discuss the interface between file system and IOCS. (10 Marks)
- b. Explain the index sequential file organization with an example. (10 Marks)

Module-5

- 9 a. Explain mailboxes, give the advantages of mail boxes. (10 Marks)
- b. Explain the primary issues in implementing message passing. (10 Marks)

OR

- 10 a. Describe message delivery protocols and the exceptional condition during message delivery with an example. (10 Marks)

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- b. Explain the following : (10 Marks)
- i) Synchronous and Asynchronous message passing.
- ii) Data – Access synchronisation.

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