

CBCS SCHEME



15EC553

USN

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Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019 Operating Systems

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Define operating system. Explain the key concerns of an operating system. (10 Marks)
b. Explain the different computational structures of operating system. (06 Marks)

OR

- 2 a. Explain different classes of operating system. (10 Marks)
b. Explain various resource allocation strategies. (06 Marks)

Module-2

- 3 a. Define process, process states and transition with suitable algorithm. (08 Marks)
b. Explain Process Control Block. (08 Marks)

OR

- 4 a. For a given set of process FCFS and SRN scheduling compare their performance in terms of mean turnaround time and weighted turnaround time. (10 Marks)

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

- b. Explain long-term and short term scheduling. (06 Marks)

Module-3

- 5 a. Compare contiguous and non-contiguous memory allocation techniques. (08 Marks)
b. Write a short note on : i) paging ii) segmentation. (08 Marks)

OR

- 6 a. Explain demand paging preliminaries. (10 Marks)
b. Write short note on :
i) First-In-First-Out (FIFO) page replacement policy. (03 Marks)
ii) Least Recently Used (LRU) page replacement policy. (03 Marks)

Module-4

- 7 a. Explain file system and IOCS. (08 Marks)
b. Explain fundamental file organizations. (08 Marks)

OR

- 8 a. Explain directory structures. (08 Marks)
b. Explain file system action at a file operation. (08 Marks)

Module-5

- 9 a. Define message passing. Explain how to implement the message passing. (08 Marks)
b. Explain mail boxes and message passing in unix. (08 Marks)

OR

- 10 a. Define deadlock. Explain deadlock in resource allocation. (08 Marks)
b. Explain deadlock detection algorithm. (08 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.