

CBCS SCHEME

18MCA25



Second Semester MCA Degree Examination, June/July 2019 Operating Systems

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain any two I/O communication techniques with flowchart. (10 Marks)
b. Describe in detail about the components of operating system and its responsibilities. (10 Marks)

OR

- 2 a. Classify the types of system calls. How does system call work? Discuss with neat diagram. (10 Marks)
b. Explain the following type of OS : i) Real time ii) Clustered system. (10 Marks)

Module-2

- 3 a. Explain the five state process with transition diagram. (10 Marks)
b. List the benefits of multithread and explain user level and kernel level threads. (10 Marks)

OR

- 4 a. Consider the following set of processes with given length of CPU burst.

Processes	P ₁	P ₂	P ₃	P ₄	P ₅
Bursts time	6	2	8	3	4
Arrival time	2	5	1	0	4

Draw Gantt Chart for SJF(Preemptive) and SJF(Non-preemptive). Find the average waiting time, for each scheduling algorithm. (10 Marks)

- b. What is critical section? Explain reader's writer's problem and write the solution using semaphore. (10 Marks)

Module-3

- 5 a. How can deadlock be prevented? Describe them. (10 Marks)
b. What is demand paging? Explain how TLB improves the performance of demand paging with neat diagram. (10 Marks)

OR

- 6 a. Write short notes about : i) Fragmentation ii) Thrashing. (10 Marks)
b. Write and explain Banker's algorithm for deadlock avoidance. (10 Marks)

Module-4

- 7 a. Explain various file allocation methods in detail. (10 Marks)
b. What are the disk scheduling methods available? Explain any four in detail with example. (10 Marks)

OR

- 8 a. Explain various file operations. (10 Marks)
b. Discuss dictionary implementation using : i) Linear list ii) Hash table. (10 Marks)

Module-5

- 9 a. Explain the components of LINUX OS. (10 Marks)
b. What are the different file system types in LINUX OS? (10 Marks)

OR

- 10 a. Discuss about the process management in LINUX OS. (10 Marks)
b. Define inter process communication and explain how it is handled in LINUX OS. (10 Marks)

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.

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