



CBCS SCHEME

18MCA25

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Second Semester MCA Degree Examination, Jan./Feb. 2021 Operating Systems

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. What is operating system? Explain with neat diagram, components of computer system. (10 Marks)
b. Explain different types of services provided by the operating system. (10 Marks)

OR

- 2 a. Explain different types of system call. (10 Marks)
b. Explain different types of system program, explain with an example. (10 Marks)

Module-2

- 3 a. What is a process? Explain process control block with neat diagram. (10 Marks)
b. What is microkernel? Explain microkernel architecture in detail. (10 Marks)

OR

- 4 a. Consider the following set of process that arrive at time zero: i) FCFS ii) SJF. Draw Gantt chart find: i) average waiting to me ii) Average turnaround time.

i)

Process	Burst time
P ₁	24
P ₂	3
P ₃	3

ii)

Process	Burst time
P ₁	6
P ₂	8
P ₃	7
P ₄	3

- (10 Marks)
b. What is concurrency? Explain the principle of concurrency. (10 Marks)

Module-3

- 5 a. What is paging? Explain paging hardware with TLB. (10 Marks)
b. What is segmentation? Explain, with neat diagram segmentation hardware. (10 Marks)

OR

- 6 a. What is Deadlock? Explain the principles of Deadlock and Deadlock prevention in detail. (10 Marks)
b. What is memory management? Explain the following i) Swapping ii) Continuous memory allocation. (10 Marks)

Module-4

- 7 a. Explain in detail, the various files operations. (10 Marks)
b. List and explain different file allocation methods. (05 Marks)
c. Explain with a diagram, indexed allocation. (05 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.

OR

- 8 a. Explain the following:
i) File attributes (10 Marks)
ii) File Types (10 Marks)
b. Explain different types of file access methods with an example. (10 Marks)

Module-5

- 9 a. Explain with a diagram, components of a Linux system. (10 Marks)
b. Explain different types of process management in Linux OS. (10 Marks)

OR

- 10 a. Explain inter process communication in Linux OS. (10 Marks)
b. Discuss about program threats and system threats in detail. (10 Marks)
