1411E1182

Candidate's Seat No :_____

M.Sc. Sem.-3 Examination

502

Computer Science

Time : 2-30 Hours] November-2025 [Max. Marks : 70

Q.1		**Write the following.**	
	A	Explain the main functions of an operating system in detail.	7
	B	Describe the different types of operating systems with examples	7
		OR	
	A	Explain process states and process life cycle with a neat diagram.	7
	B	What is deadlock? Explain the conditions for deadlock and the methods to handle it.	7
Q.2		**Write the following.**	
	A	Explain memory management techniques used in operating systems.	7
	B	Discuss the difference between paging and segmentation with examples.	7
		OR	
	A	Explain the concept of scheduling. Describe different CPU scheduling algorithms.	7
	B	What are system calls? Explain their types with examples.	7
Q.3		**Write the following.**	
	A	Explain file management in operating systems.	7
	B	Explain Synchronization in Distributed Systems.	7
		OR	
	A	Explain Processes and Processors in Distributed Systems. Discuss their characteristics.	7
	B	Explain Real-Time Distributed Systems. Discuss their characteristics, types, architecture, challenges, and applications.	7
Q.4		**Write the following.**	
	A	Explain Distributed Shared Memory (DSM). Discuss its concept & architecture.	7
	B	Explain Distributed File Systems (DFS). Discuss its architecture, design goals.	7
		OR	
	A	Explain Distributed Shared Memory (DSM). Advantages, disadvantages, and applications.	7

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	B	Explain Distributed File Systems (DFS). advantages, disadvantages, and applications.	7
Q.5		**MCQ**	14

1. Which of the following is NOT an operating system?
A. Windows
B. Linux
C. Oracle
D. macOS

2. The program that manages hardware resources is called
A. Application software
B. Operating system
C. Compiler
D. Assembler

3. Which scheduling algorithm gives the highest priority to the shortest job?
A. FCFS
B. SJF
C. Round Robin
D. Priority Scheduling

4. Thrashing occurs when
A. CPU is idle
B. Too many processes are in memory
C. Page fault rate is high
D. There is insufficient I/O

5. A process in the blocked state is
A. Waiting for CPU
B. Running
C. Waiting for I/O
D. Terminated

6. Which of the following is a non-volatile memory?
A. RAM
B. Cache
C. ROM
D. Register

7. The directory structure that resembles a tree is called
A. Single-level directory
B. Two-level directory
C. Hierarchical directory
D. None of the above

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