Q.P.Code: 25MC9110 | R25 | H.T.No. | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
MCA I Year II Semester Regular Examinations May-2026
OPERATING SYSTEMS

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12** = **60** Marks)

UNIT-I

1	a	Define system calls and explain their purpose in an operating system.	CO1	L1	6M
	b	Demonstrate how an operating system manages process and memory during execution.	CO1	L2	6M

OR

2	a	Illustrate how OS services are used in executing a program.	CO1	L1	6M
	b	List different types of Operating systems and describe each with an example.	CO1	L4	6M

UNIT-II

3	a	Consider the following process. Apply the FCFS scheduling algorithm and calculate the waiting time and turnaround time for each process.	CO2	L6	6M

Process	Arrival Time	Burst Time
P1	0	7
P2	2	4
P3	4	1
P4	5	4

	b	Demonstrate how a process moves from ready state to running state.	CO2	L2	6M

OR

4	a	What is a critical section?" Explain the significance in process synchronization.	CO2	L1	6M
	b	Analyze the role of Process Control Block (PCB) in process management.	CO2	L4	6M

UNIT-III

5	a	What is Swapping? Explain with a diagram.	CO3	L1	6M
	b	Evaluate advantages and disadvantages of swapping.	CO3	L4	6M

OR

6	a	Discuss segmentation with suitable example.	CO3	L6	6M
	b	Compare all file allocation methods.	CO3	L4	6M

UNIT-IV

7	a	Write short notes on resource allocation graph.	CO4	L3	6M
	b	Explain the concept of recovery from deadlock.	CO4	L2	6M

OR

8	a	Compare Sequential access, direct access and indirect access methods.	CO4	L4	6M
	b	Discuss various RAID Levels in detail.	CO4	L6	6M

UNIT-V

9	a	Define system protection. What are the main goals of protection in an operating system?	CO5	L1	6M
	b	What is revocation of access rights? Why is it necessary?	CO5	L1	6M

OR

10	a	Explain different methods of security attacks.	CO5	L5	6M
	b	Apply encryption techniques to secure communication between two users.	CO5	L6	6M

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