O.P.Code: 23CS0511	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. II Year II Semester Regular & Supplementary Examinations March/April-2026
OPERATING SYSTEMS
(Common to CSE, CCC, CIC & CIA)

Time: 3 Hours **Max. Marks: 70**

PART-A

(Answer all the Questions **10 x 2 = 20** Marks)

1	a	Define Operating System.	CO1	L1	2M
	b	What is Booting? List and define its types.	CO1	L1	2M
	c	Interpret the difference between preemptive and non-preemptive scheduling.	CO4	L4	2M
	d	What is meant by convoy effect?	CO4	L4	2M
	e	List and define the conditions that critical section problem must satisfy.	CO3	L1	2M
	f	Give the benefits and drawbacks of Mutex Locks.	CO3	L1	2M
	g	What is meant by Paging and Page fault?	CO6	L1	2M
	h	Describe virtual memory with neat diagram.	CO6	L1	2M
	i	List out the directory support operations on the file.	CO2	L1	2M
	j	List the reasons for local file system failures	CO2	L1	2M

PART-B

(Answer all Five Units **5 x 10 = 50** Marks)

UNIT-I

2	a	List and discuss the different functions of an operating system	CO1	L2	5M
	b	Explain different operations performed by the operating system	CO1	L2	5M
		OR			
3		Discuss the types of Operating System in detail.	CO1	L2	10M

UNIT-II

4	a	Describe Context Switching and the types of context switching triggers in detail.	CO1	L2	5M
	b	Give the difference between Process and Thread	CO1	L4	5M
		OR			
5	a	Examine in detail about Inter Process Communication.	CO1	L4	5M
	b	Define thread. Analyze the difference between User-Level & Kernel-Level Thread.	CO1	L2	5M

UNIT-III

6	a	What is critical section problem? Explain with example.	CO3	L2	
	b	Describe deadlock recovery and how it is performed.	CO5	L2	
		OR			
7	a	What is Semaphore? Explain its types with example.	CO3	L2	
	b	Explain producer consumer problem using semaphore.	CO3	L2	

UNIT-IV

8		Explain the different techniques used to structure page tables in operating systems, and how do they help manage large address spaces efficiently?	CO6	L2	
		OR			
9	a	Describe about Swapping in memory management with its advantage and disadvantages.	CO6	L2	
	b	Analyze the difference between Paging and Segmentation.	CO6	L4	

UNIT-V

10	a	What is file? Explain its structure and attributes in detail.	CO3	L2	
	b	Analyze the different file types available.	CO2	L4	
		OR			
11		Explain about file access methods with Example.	CO2	L3	

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