Course Code: 23MC1T03

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(AUTONOMOUS)

I – MCA I - Semester Supplementary Examinations (BR23), February - 2026

COMPUTER ORGANIZATION & OPERATING SYSTEMS (MCA)

Time: 3 hours Max. Marks: 70

Answer any Five Questions One Question for One UNIT
ALL the Question Carry Equal Marks

		Marks	CO	BL
	UNIT-I			
1.a)	With a neat sketch explain Information transfer between Processor and Memory	7M	CO1	BL2
b)	What is System Software? Explain its applications	7M	CO1	BL2
	OR			
2.a)	Write the steps for Programmed Control I/O	7M	CO1	BL3
b)	Describe Stack memory organization	7M	CO1	BL2
	UNIT-II	**Marks**	**CO**	**BL**
3.a)	Discuss briefly about the types of Operating System	7M	CO2	BL2
b)	Explain about Layered and Micro kernel Structures	7M	CO2	BL3
	OR			
4.a)	Elaborate Operating System Functions	7M	CO2	BL3
b)	What are different types of System Calls	7M	CO2	BL3
	UNIT-III	**Marks**	**CO**	**BL**
5.a)	What are the components of process control block and explain?	7M	CO3	BL2
b)	Discuss briefly about Process Scheduling?	7M	CO3	BL3
	OR			
6.a)	Explain about Round Robin Algorithm with Example?	7M	CO3	BL4
b)	What is Scheduling Criteria and Discuss briefly about the types ?	7M	CO3	BL2
	UNIT-IV	**Marks**	**CO**	**BL**
7.a)	Write and explain the solution for Reader-Writer classical Synchronization problem using monitors?	7M	CO4	BL4
b)	Discuss about Critical Section Problem	7M	CO4	BL3
	OR			
8.a)	Identify the techniques used to prevent the deadlocks?	7M	CO4	BL4
b)	Define Deadlock with Deadlock Detection and Recovery Methods?	7M	CO4	BL3
	UNIT-V	**Marks**	**CO**	**BL**
9.a)	Explain in detail about paging technique and its implementation	7M	CO5	BL4
b)	What is the need of demand paging? Explain briefly	7M	CO5	BL4
	OR			
10.a)	Discuss about the Types of File Directory Structures	7M	CO5	BL3
b)	Consider a disk queue with requests for I/O to blocks on cylinders **98, 183, 41, 122, 14, 124, 65, 67.** The head is initially at **cylinder number 53**. The cylinders are numbered from 0 to 199. Find out the total head movement (in number of cylinders) incurred while servicing these requests with respect to SSTF algorithms	7M	CO5	BL4

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