

Code No: **R20A0563****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY****(Autonomous Institution – UGC, Govt. of India)****II B.Tech I Semester Supplementary Examinations, June 2025****Computer Organization and Operating Systems****(B.Tech-AIDS)**

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

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing **ONE** Question from each SECTION and each Question carries 14 marks.

SECTION-I

			BCLL	CO(s)	Marks
1	<i>A</i>	What are the functional units of a computer? Explain in detail	L2	CO-I	[7M]
	<i>B</i>	Explain the factors that affect the performance of a computer system	L3	CO-I	[7M]

OR

2	<i>A</i>	Explain the organization of basic computer registers and the common bus system.	L2	CO-I	[7M]
	<i>B</i>	Describe the instruction cycle in a basic computer system	L3	CO-I	[7M]

SECTION-II

3	<i>A</i>	Explain paging and the structure of the page table in memory management.	L3	CO-II	[7M]
	<i>B</i>	What is segmentation in memory management, and how does it differ from paging?	L1	CO-II	[7M]

OR

4		Explain how associative memory works, its advantages, and where it is commonly used in computing systems	L2	CO-II	[14M]
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SECTION-III

5		Explain in detail about asynchronous data transfer modes.	L3	CO-III	[14M]
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OR

6		Explain in detail about DMA Controller using neat block diagram.	L3	CO-III	[14M]
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SECTION-IV

7	<i>A</i>	What is the Linux shell, and what are its different types?	L1	CO-IV	[7M]
	<i>B</i>	Define a process in the context of an operating system and explain process states.	L2	CO-IV	[7M]

OR

8		Discuss various CPU scheduling algorithms, such as First-Come-First-Served (FCFS), Shortest Job Next (SJN), Priority Scheduling, and Round Robin (RR), providing examples of how they work	L4	CO-IV	[14M]
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SECTION-V

9	<i>A</i>	What are the different methods for handling deadlocks in an operating system?	L2	CO-V	[7M]
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	<i>B</i>	Explain deadlock prevention and the strategies used to prevent deadlocks	L3	CO-V	[7M]
		OR			
10		Discuss in detail about different file access methods in storage management.	L3	CO-V	[14M]
