Course Code: 24BC3T06

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(AUTONOMOUS)

II - BCA I-Semester Regular Examinations (BR24), Jan/Feb - 2026

OPERATING SYSTEMS (BCA)

Time: 3 hours | Max. Marks: 70

Question Paper consists of Part-A and Part-B
*Answer **ALL** the question in **Part-A and Part-B***

PART–A (10X2 = 20M)

		Marks	CO	BL
1. a)	Define Operating System.	(2M)	1	1
b)	List any two operating system services.	(2M)	1	2
c)	Define process.	(2M)	2	1
d)	Explain Process Control Block (PCB).	(2M)	2	2
e)	Define paging.	(2M)	3	1
f)	Explain virtual memory.	(2M)	3	2
g)	Define critical section.	(2M)	4	1
h)	Explain semaphore.	(2M)	4	2
i)	Define file.	(2M)	5	1
j)	Explain disk scheduling.	(2M)	5	2

PART–B (5X10 = 50M)

2a.	Explain types of operating systems with examples.	5(M)	1	2
b.	Explain operating system services.	5(M)	1	2
	(OR)			
3a.	Describe the structure of OS with diagram.	5(M)	1	2
b.	Explain system calls and their types.	5(M)	1	2
4a.	Analyse process state diagram with transitions.	5(M)	2	4
b.	Explain inter-process communication.	5(M)	2	2
	(OR)			
5a.	Analyse the criteria used for CPU scheduling and explain how each criterion affects system performance.	5(M)	2	4
b.	Apply FCFS process scheduling for processes with arrival times 0,2,4,6 and burst times 5,3,8,6.	5(M)	2	3

6a.	Apply the contiguous memory allocation techniques and explain their advantages and limitations.	5(M)	3	3
b.	Explain the concept of paging and explain the page table in address translation.	5(M)	3	3
	(OR)			
7a.	Explain the concept of virtual memory and discuss its significance in modern operating systems.	5(M)	3	3
b.	Apply the concept of demand paging and explain its working process with a suitable example.	5(M)	3	3
8a.	What is process synchronization and explain how they help in maintaining data consistency.	5(M)	4	3
b.	Analyze critical section problem and its solution requirements.	5(M)	4	4
	(OR)			
9a.	Explain deadlock characterization conditions in operating systems.	5(M)	4	2
b.	Apply deadlock prevention methods to avoid system deadlocks.	5(M)	4	3
10a	Explain file access methods used in file systems.	5(M)	5	2
b.	Explain directory structures and their advantages.	5(M)	5	2
	(OR)			
11a	Apply file allocation methods used in operating systems.	5(M)	5	3
b.	Apply SCAN disk scheduling algorithm with suitable example.	5(M)	5	3

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