

**BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)**

**II-BCA I-Semester Model Paper (BR24), JAN-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 Kernel?	(2M)	CO1	L1
b)	Explain the Monolithic Structure?	(2M)	CO1	L2
c)	What is Threading?	(2M)	CO2	L1
d)	What is the Difference between Program and Process?	(2M)	CO2	L2
e)	Define first-fit, best-fit, and worst-fit Allocation Strategies.	(2M)	CO3	L3
f)	Define Page and Frame?	(2M)	CO3	L1
g)	What is a Semaphore?	(2M)	CO4	L1
h)	List any Three Classic Synchronization Problems.	(2M)	CO4	L2
i)	Define File Protection?	(2M)	CO5	L3
j)	What is Disk Scheduling?	(2M)	CO5	L1

PART-B(5X10=50M)

2.	Discuss the Services of an Operating System	(10M)	CO1	L2
(OR)				
3.	What is System call? Explain Types of System calls?	(10M)	CO1	L2

4.	What is Scheduler? Explain Types of Schedulers?	(10M)	CO2	L2																		
(OR)																						
5.	Define scheduling algorithms and explain Shortest Job first Algorithm? Consider the set of 5 processes whose arrival time and burst time are given	(10M)	CO2	L3																		
<table border="1"> <thead> <tr> <th>Processes</th> <th>P1</th> <th>P2</th> <th>P3</th> <th>P4</th> <th>P5</th> </tr> </thead> <tbody> <tr> <td>AT</td> <td>2</td> <td>5</td> <td>1</td> <td>0</td> <td>4</td> </tr> <tr> <td>BT</td> <td>6</td> <td>3</td> <td>8</td> <td>3</td> <td>4</td> </tr> </tbody> </table>		Processes	P1	P2	P3	P4	P5	AT	2	5	1	0	4	BT	6	3	8	3	4			
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AT	2	5	1	0	4																	
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Calculate the Average waiting time, Average turnaround time																						

6.	What is a Logical (virtual) Address and Physical Address in Paging?	10(M)	CO3	L2
(OR)				
7a.	Explain the FIFO Page-Replacement Algorithm?	(5 M)	CO3	L2
7b.	What is a page fault in Demand Paging?	(5 M)	CO3	L1

8	What is Process Synchronization? What is the role of the Operating System in Synchronization?	(10M)	CO4	L2
(OR)				
9.	Briefly explain Deadlock Prevention Methods?	(10 M)	CO4	L2

10.	What is a File? What is an Access Method in File Systems?	(10M)	CO5	L3
(OR)				
11a.	What is File Sharing? Explain file Sharing on a Distributed System?	(5 M)	CO5	L2
11b.	Explain the FCFS Disk Scheduling Algorithm?	(5 M)	CO5	L2
