

PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)
II B.Tech II Semester Regular/Supplementary Examinations, May-2024
OPERATING SYSTEMS
(IT)

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

Answer ONE Question from each Unit
All Questions Carry Equal Marks

Q. No.	Questions		BTL	CO	Marks															
UNIT – I																				
1.	a)	Summarize the Classifications and functions of Operating System.	K2	CO1	7M															
	b)	Explain the activities of Operating System in connection with Memory and Process management.	K2	CO1	7M															
OR																				
2.	Explain the system calls like (i) process control, (ii) file manipulation, (iii) device manipulation, (iv) information maintenance, (v) communication and (vi) protection in detail.		K2	CO1	14M															
UNIT – II																				
3.	a)	Draw and explain five state process model.	K3	CO2	9M															
	b)	What is a process control block?	K2	CO2	5M															
OR																				
4.	Assume the following workload in a system. All jobs arrive at time 0 in the order given. <table border="1"><thead><tr><th>Process</th><th>Burst Time</th><th>Priority</th></tr></thead><tbody><tr><td>P1</td><td>30</td><td>High</td></tr><tr><td>P2</td><td>28</td><td>High</td></tr><tr><td>P3</td><td>04</td><td>Low</td></tr><tr><td>P4</td><td>16</td><td>Medium</td></tr></tbody></table> Draw a Gantt chart illustrating the execution of these jobs using Priority CPU scheduling algorithm and also Calculate the average waiting time and average turnaround time.		Process	Burst Time	Priority	P1	30	High	P2	28	High	P3	04	Low	P4	16	Medium	K4	CO3	14M
Process	Burst Time	Priority																		
P1	30	High																		
P2	28	High																		
P3	04	Low																		
P4	16	Medium																		
UNIT – III																				
5.	a)	Explain the five major activities of an operating system with regard to memory management.	K2	CO3	7M															
	b)	What is paging? Explain the steps involved in handling a page fault.	K2	C03	7M															
OR																				
6.	Explain the LRU and Optimal page replacement algorithms. Give suitable an example.		K2	CO3	14M															
UNIT – IV																				
7.	a)	Explain Banker's deadlock-avoidance algorithm with an illustration.	K3	CO4	7M															
	b)	Explain the three allocation methods in file system implementation. Illustrate with a proper diagram.	K2	CO4	7M															
OR																				
8.	a)	Explain different File Attributes and File Operations.	K2	CO4	7M															

	b)	Discuss different RAID structures.	K2	CO4	7M
UNIT – V					
9.	a)	Discuss about goals and principles of system protection.	K2	CO5	7M
	b)	Write about the System and network threats.	K1	CO5	7M
OR					
10.	a)	How to Implement security defenses? Explain it.	K2	CO5	7M
	b)	Explain the characteristics and components of LINUX.	K2	CO5	7M