Theory Question Bank- OPERATING SYSTEMS

CO	Statement	BL
	Course Outcome: Students will be able to	
CO1	Comprehend the features of the operating system to formulate its role and responsibilities.	BL2
CO2	Analyze the principles of process scheduling and process synchronization.	BL3
CO3	Simulate memory management technique for CPU performance.	BL3
CO4	Describe how the file system, mass storage, and I/O are handled in a modern computer system	BL3

Section - I				
Unit 1				
Que. No	**Question**	**CO**	**BL**	**Marks**
1	Explain Operating System with its goals Simple Batch System	1	1	4
2	Explain multiprogrammed batch system	1	2	4
3	Explain time sharing system,	1	1	4
4	Explain personal computer system, parallel system	1	1	8
5	Explain concept of spooling in detail.	1	1	4
6	Explain real time system	1	2	4
7	Explain system Calls in detail.	1	2	4
Unit 2				
Que. No	**Question**	**CO**	**BL**	**Marks**
1	Explain Concept of Process along with its life cycle	2	2	4
2	Explain PCB with neat diagram	2	2	4
3	Explain Context switch in detail	2	2	4
4	Explain the Operations on processes	2	2	4
5	Explain the Concept of Thread in detail.	2	2	4
6	Explain Inter process Communication in detail	2	2	4
7	Explain CPU – I/O Burst Cycle	2	2	4

Unit 3				
Que. No	**Question**	**CO**	**BL**	**Marks**
1	Explain Process Scheduling along with Long term scheduler, medium term scheduler short term scheduler	2	2	8
2	Explain Scheduling Criteria in detail.	2	2	4
3	Explain multilevel queue scheduling algorithm & Multilevel feedback queue scheduling	2	2	8
	Explain Scheduling algorithm with example A. RR (TQ=2) B. Priority C. FCFS D. SFF E. SRTN Must include Gantt chart, average waiting time , Average turnaround time	2	3	8
5	Explain Multiple processor scheduling	2	2	4
6	Explain Ageing and Starvation Belady's Anomaly with suitable example	2	2	4

Process Id	Priority	Burst time
P1	0	5
P2	1	3
P3	2	1
P4	3	2
P5	4	3

Unit 4				
Que. No	**Question**	**CO**	**BL**	**Marks**
1	Explain Petersons algorithm	2	3	4
2	Explain critical section problem	2	3	4
3	Explain Semaphores	2	3	4
4	Explain Classical Problems of Synchronization Dining Philosopher 2. Producer Consumer 3. Sleeping Barber	2	3	8o

Unit 5				
Que. No	Question	CO	BL	Marks
1	Explain Deadlock along with System model	3	3	4
2	Explain Deadlock Which are the necessary conditions for Deadlock?	3	3	8
3	Explain Resource allocation graph algorithm with example.	3	3	4
4	Explain deadlock detection algorithm for the multiple instances of resources	3	3	8
5	Explain different data structures required for the Banker's algorithm? Write Safety algorithm / Deadlock Detection Algorithm.	3	3	8
6	Explain 1. Deadlock with example. 2. characterization of deadlock	3	2	8
7	Explain the ways for prevention of deadlock.	3	3	8
8	Explain Banker's algorithm with example	3	3	8
9	Explain characterization of deadlock	3	2	4

Unit 6				
Que. No	Question	CO	BL	Marks
1	Explain Logical Versus Physical Address space,	3	2	4
2	Explain Swapping with neat diagram	3	3	4
3	Explain Contiguous Allocation	3	3	4
4	Explain 1. First Fit 2. Best Fit 3. Worst Fit	3	3	4
5	Explain segmentation with neat diagram	3	3	4
6	Explain paging with suitable diagram.	3	3	4

Unit 7				
Que. No	**Question**	**CO**	**BL**	**Marks**
1	Explain concept of Demand paging	3	3	4
2	Explain Page replacement Algorithms with example FIFO LRU OPTIMAL	3	3	8
3	Explain LRU and Optimal and solve example with 3 frames 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2,1,2,0,1, 7, 0, 1	3	3	8
4	Explain concept of thrashing	3	3	4
5	Explain page fault handling with neat diagram	3	3	8
Unit 8				
Que. No	**Question**	**CO**	**BL**	
1	Explain DMA with neat diagram.	4	3	4
2	Explain PC bus structure.	4	3	4
3	Explain classical problems of Synchronization	4	3	8
4	Explain Application I/O interface	4	2	4