

II-B.TECH(R-22) I-SEM II-MID EXAMINATIONS, DECEMBER 2024

SUBJECT: OPERATING SYSTEMS

BRANCH: CSE, CSM, CSD, CS, IT

MARKS:30 M

Date: 5/12/2024

Time: 10AM to 12:00 PM

Answer all questions in Part-A

Part-A	BTL	CO
Q1. What is meant by pipe? List the types of pipes.	1	[CO3]
Q2. Distinguish between the Logical and Physical Address Space.	4	[CO4]
Q3. Write about the page replacement algorithm.	6	[CO4]
Q4. List out the File attributes.	1	[CO5]
Q5. Explain about Linked file allocation method.	2	[CO5]

Answer any four questions

Part-B	4*5=20
Q6. What is Mutual-exclusion? Explain Peterson's solution for Mutual-exclusion problem.	1,2 [CO3]
Q7. Consider the following page reference string: 7,0,1,2,0,3,0,4,2,3,0,3,0,3,2,1,2,0,1,7,0,1. How many page faults would occur for the LRU and Optimal page replacement algorithms, assuming three frames and all frames are initially free?	1 [CO4]
Q8. a) Discuss in detail about different file access methods.	6 [CO5]
b) Briefly explain the directory organization.	2 [CO5]
Q9. Define Semaphore. Discuss about implementation of Semaphore.	1,6 [CO3]
Q10. Explain about performance of demand paging and pure demand paging?	5 [CO4]
Q11. Explain the following system calls: a) open() b) read() c) write() d) lseek() e) ioctl()	5 [CO5]

SCHEME OF EVALUATION

S.NO	THEORY	MARKS	TOTAL
1	What is meant by pipe? List the types of pipes.	2	10
2	Distinguish between the Logical and Physical Address Space.	2	
3	Write about the page replacement algorithm.	2	
4	List out the File attributes.	2	
5	Explain about Linked file allocation method.	2	
6	Part-B What is Mutual-exclusion? Explain Peterson's solution for Mutual-exclusion problem.	5	20
7	Consider the following page reference string: 7,0,1,2,0,3,0,4,2,3,0,3,0,3,2,1,2,0,1,7,0,1. How many page faults would occur for the LRU and Optimal page replacement algorithms, assuming three frames and all frames are initially free?	5	
8	a) Discuss in detail about different file access methods.	2	
	b) Briefly explain the directory organization.	3	
9	Define Semaphore. Discuss about implementation of Semaphore.	5	
10	Explain about performance of demand paging and pure demand paging?	5	
11	Explain the following system calls: a) open() b) read() c) write() d) lseek() e) ioctl()	5	
TOTAL MARKS		40	30