

PARUL INSTITUTE OF ENGINEERING AND TECHNOLOGY
COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

Subject Name: Operating system

Assignment 3

1. Explain swapping in memory management.
2. Explain Virtual Memory Management with Paging in Detail
3. Explain various Page Replacement Algorithms with example.
4. What do you mean by Virtual Memory and Physical Memory?

5- EXPLAIN DEADLOCK AND DEADLOCK HANDLING

6- EXPLAIN BANKER ALGORITHM & RESOURCE ALGORITHM GRAPH

7- A System consist of 5 processes P1-P5 and 4 Resources R1, R2, R3, R4. Resource type R1, R2, R3, R4 has total 13, 13, 9, 13 instances respectively. Consider following snapshot of the system

Process	Maximum Need				Current Allocation			
	R1	R2	R3	R4	R1	R2	R3	R4
P1	3	2	4	2	1	0	2	0
P2	3	5	1	2	0	3	1	2
P3	2	7	7	5	2	4	5	1
P4	5	5	0	8	3	0	0	6
P5	6	2	1	4	4	2	1	3

(1) Compute the Need matrix.

(2) Determine the state is safe or not using Banker's Algorithm.

(3) Process P1 request for (R1, R2, R3, R4) = (1, 0, 2, 2) additional resource. Can resource request be granted immediately.