NAME: A.MONISHA
ROLL NO: 19CSE012
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OPERATING SYSTEMS

PART-A

1. All the addresses need to be added by 250. So, the addresses would be 300, 328, 400, 402, 404 respectively.

2. The system's redimit register must have 64 bits.

PART-B

1)

i) A page fault occurs when an access to a page that has not been brought into main memory takes place. The operating system verifies the memory access, aborting the program if it is invalid. If it is valid, a free frame is located and I/O is requested to read the needed page into the free frame. Upon completion of I/O, the process table and page table are updated and the instruction is restarted.

9p) Situation 1:

When LPU generates fewer page faults than LPU

LRU:

1	2	3	4	2	1	5	6	2	1	2	3	7	6	3	2	1	2	3	6
1	1	1	4			4	5	5	5	1		1	7	7	$\not 6$	$\not 2$	2		2
		2	2	2			2	2	6	6	6		3	3	3		3	3		3
			3	3				1	1		1	2	2	$\not 2\not 2$	6		6	1		6

Page faults : 15

LFU

1	2	3	4	2	1	5	6	2	1	2	3	7	6	3	2	1	2	3	6
1	1	1	4			4	5	5			1		1	7	7	3			3
	2	2	2			2	2	2			2		2	2	2	2			2
		3	3			1	1	6			6		3	3	6	6			6

page faults : 14

page faults of LFU < page faults of LRU

Situation 2:

When LRU generates fewer page fault than LFU

7	0	1	2	0	3	0	4	2	3	0	3	2	1	2	0	1	7	0	1
7	7	7	2		2		4	4	4	0			1		1		1		
		0	0	0		0		0	3	3			3		0		0		
			1	1		3		2	2	2			2		2		7		

page faults = 12