 **Practice Sheet-5**

**Operating System (Linux)**

**CST108**

**Q.1** How lazy swapper is different from normal swapping algorithm?

**Q.2** A system supports virtual memory with demand paging. Consider the following string of page references by a particular process P0.

1, 2, 3, 4, 1, 2, 5, 1, 2, 3, 4, 5, 4, 2, 3

Assuming P0 has been allocated *three* frames in the physical memory:

a. Compute the number of page faults if the First-In First-Out (FIFO) page replacement algorithm is used.

b. Compute the number of page faults if the Least-Recently-Used (LRU) page replacement algorithm is used.

c. Compute the minimum number of page faults.

**Q.3** Consider the following page reference string:

1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6.

How many page faults would occur for the following replacement algorithms, assuming four and five frames? Remember all frames are initially empty so your first unique pages will all cost one fault each.

 LRU replacement

 FIFO replacement

 Optimal replacement

**Q.4** How many page faults occur for your algorithm for the following reference string, for four page frames?

1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 7, 8, 9, 7, 8, 9, 5, 4, 5, 4, 2.

What is the minimum number of page faults for an optimal page-replacement strategy for the reference string with four page frames?