Time: 3 hours   FM: 70

(Answer any five)

1. (a) What are the advantages of using virtual memory in a system?   3
   (b) How pure demand paging differs from demand paging?   2
   (c) What is page fault service routine?   4
   (d) Describe the FIFO page replacement algorithm with example.   5

2. Write short notes on any two: 7x2
   (a) Optimal page replacement algorithm
   (b) Global vs. local allocation algorithm
   (c) Resource allocation graph algorithm for deadlock avoidance

3. (a) What is thrashing? How does it affect the system performance?   2+4
   (b) Compare the performances of contiguous, linked and indexed allocation method in the
       context of file system organization.   8

4. (a) The read/write head of a disk starts from track 100. The pending requests are for tracks
       43, 158, 44, 203, and 175. Find the total number of track movement of the head in case
       of FCFS, SSTF, and Look disk scheduling algorithm.   6
   (b) Describe, in brief, the various methods of disk management.   8

5. (a) How the threat monitoring and audit log can be used to improve the security of a
       system?   6
   (b) What is access matrix? How is it possible to change the contents of access matrix
       entries?   2+6

6. (a) How inverted page table can be used to reduce the size of page table in physical
       memory?   4
   (b) What is external page table?   2
   (c) How two level directory system differs from one level directory system? 2
   (d) Describe the acyclic graph directory.   6