Q.1
a. How does the distinction between kernel mode and user-mode function as a rudimentary form of protection (security) system?

b. What is the difference between Multiprogramming and Multitasking operating system?

c. Explain CPU Scheduling criteria.

d. How deadlock can be characterized?

e. What are the various types of fragmentation?

f. What are the various operations on directories? Explain two level directory structures.

g. Explain any four program threats.  

(7 × 4)

Q.2
a. What do you mean by Parallel (Multiprocessor) System? What are its main types? Explain.

b. What are virtual machines? Explain their model with functioning? Also discuss its advantages and disadvantages.

Q.3
a. What is inter-process communication? How it is implemented?


Q.4
a. What is contiguous memory allocation? How will you solve the dynamic storage allocation problem?

b. Explain Segmentation with Paging taking case of Intel 386.
Q.5 a. What is thrashing? Explain the concept of Working set Window with the help of example. (9)

b. What is SCAN algorithm for disk scheduling? (9)

Q.6 a. State three advantages of placing functionality in a device controller rather than in the kernel. State three disadvantages. (9)

b. How security can be achieved using Authentication? Explain MAC (Message Authenticate Code). (9)

Q.7 a. What is the use of Access Matrix to protect the resources? Explain its implementation. (9)

b. The benefits of multithreaded programming can be broken down into four major categories. Discuss them briefly. (9)