Roll No. ....   Total Pages : 3

Time : Three Hours]   [Maximum Marks : 80

Note : Question No. 01 is compulsory and each question carry equal marks, in addition to the first question attempt any *five* questions by selecting *one* question from each unit.

Compulsory Question

1. Write short notes on the following :

   (a) Explain in brief Threads.

   (b) Explain the classic problems of synchronizations.

   (c) What are the functions of fork () and exec () system call ?

   (d) Explain the advantage of multiprogramming.

   (e) Describe the various versions of window as operating system.

   (f) What are the principles of protection?

   (g) List the advantages of acyclic graph directories over tree structured directories.

   (h) What is system program?

UNIT–I

2. (a) What are system calls? Explain with an example.

   (b) What is real time system and distributed systems in detail?

3. What is CPU scheduling? Explain the various scheduling algorithms with some suitable examples.

UNIT–II

4. What is deadlock explain deadlock characterization in detail and explain deadlock prevention and recovery techniques ? Explain them.

5. (a) What is Thrashing? Is thrashing good for the system ? Does it have some disadvantages ?

   (b) What are the solutions for Internal and External fragmentation problem?

UNIT–III

6. What is Directory System? Explain the various file access and allocation method.

7. Explain the disk scheduling policies in detail.

UNIT–IV

8. (a) What is an access matrix? Discuss various implementations of access matrix in brief.

   (b) What is goal protection? Also describe major principles of protection.

9. Explain the various issues involved in the design of a distributed system. How does distributed system differ from a networks operating system ?