

# **Siddharth Institute of Engineering & Technology::Puttur**

## **(16MC813) Operating Systems**

### **Question Bank**

#### Unit - I

1. What are the objectives and functions of operating systems?
2. Write short notes on : simple batch, multi-programmed, time-shared systems
3. Explain different services provided by operating systems.
4. What are the differences between distributed systems and real time systems?
5. Define system calls and discuss various types of system calls.
6. What are the challenges in design and implementation of operating systems?
7. Write short note on Evolution of Operating Systems.
8. Write short note on System Architecture and OS structure.
9. What the system programs and explain.

#### Unit – II

1. Define process state and explain different process state with neat diagram.
2. Write short note on: Process control block, context switch, dispatcher
3. What is a thread? Discuss about thread scheduling
4. Discuss FCFS and SJF cpu scheduling algorithms in detail
5. Explain about Priority, round-robin cpu scheduling algorithm.
6. What is mean by process synchronization? Discuss in detail classic problems of synchronization.
7. Write about Peterson's solution for synchronization.
8. How semaphore and monitors are used in process synchronization?
9. What are the scheduling criteria? Explain in detail.
10. Explain preemptive and non-preemptive scheduling in detail.
11. Explain multiple processor scheduling and real-time scheduling.
12. Explain classic problems of synchronization.
13. Write note on multi-level feedback queue and round-robin scheduling algorithm.

#### Unit – III

1. Write short note on :
  - a. Overlays
  - b. Swapping
2. Explain the paging memory management technique in detail.
3. Define page fault. Discuss the various steps involved while handling it.

4. Explain any one of the page What is fragmentation? Explain
5. What is fragmentation? Explain internal and external fragmentation in detail.
6. Briefly explain about the following algorithm with suitable example.
  - a. First fit
  - b. Best fit
  - c. Worst fit
7. Explain demand paging
8. Explain any one of the page replacement algorithm with suitable illustration
9. Explain segmentation technique in brief.

#### Unit – IV

1. Discuss about mass storage structure and disk structure in detail.
2. Discuss about various disk scheduling in detail.
3. Explain about RAID structure in detail.
4. Explain about stable storage and tertiary storage structure in detail.
5. Explain the different file accessing methods
6. Explain various directory structure
7. Briefly discuss about file sharing
8. Explain file implementation methods
9. Discuss on directory implementation
10. Discuss about free space management

#### Unit – V

1. What is deadlock? Explain with an example.
2. What are the necessary conditions of a deadlock? Explain in detail.
3. Write short notes on resource allocation graph.
4. Explain deadlock prevention method.
5. Explain banker's algorithm for deadlock avoidance.
6. Explain about deadlock detection algorithm in detail.
7. Discuss about deadlock recovery technique.
8. Discuss the goals of protection and principles of protection in detail.
9. Write about domain protection
10. Discuss language based protection.
11. Justify that the cryptography as a security tool.