



# MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu.

## Department of Computer Science and Engineering

### Question Bank - Academic Year (2020-21)

**Course Code & Course Name : 19ADC07&OPERATING SYSTEMS**

**Name of the Faculty : R.NIVETHITHA.**

**Year/Sem/Sec : III/II**

#### UNIT-I: OPERATING SYSTEMS OVERVIEW

##### Part-A (2 Marks)

1. Define Operating Systems.
2. List the operating system components.
3. Write the Real-Time Systems .
4. Differentiate Single Processor System and Multiprocessor Systems.
5. What is system call ? and its types
6. Define System Boot.
7. State the Spooling and Batch processing .
8. List out the operations on Processes.
9. State the inter process communication
10. What is meant by context switch? .

##### Part-B (16 Marks)

1. Discuss details about operating operations and components. (16)
2. Explain the Operating System Structures. (16)
3. Describe about the Open- Source Operating Systems Structures (8)  
Discuss about the Process Scheduling with suitable example (8)
- 4.(i). Briefly explain various management of operating systems and their responsibilities (8)  
(ii). Write short notes on Operating system functions (8)
5. Explain in details about Inter process Communication with suitable examples (16)

## **UNIT-II : THREADS AND SCHEDULING ALGORITHMS**

### **Part-A (2 Marks)**

1. A Define race condition.
2. What is a semaphore?
3. Define busy waiting and spinlock.
4. Differentiate a thread and process.
5. Define ready queue
6. List the scheduling algorithms.
7. State Mutex Locks
8. Define multi level queue
9. What is the difference between preemptive and non-preemptive scheduling
10. Differentiate single threaded and multi-threaded processes?

### **Part-B (16 Marks)**

1. Explain in detail about Overview of Threads–Multithreading models - Threading issues (16)
2. Describe the Process Synchronization with suitable examples. (16)
3. Explain details about FCFS, SJF, Round -Robin scheduling algorithm (16)
4. Discuss the evolution of virtual machines & how virtualization could be implementation in OS (16)
- 5.(i). Explain the process concepts and thread. (8)
- (ii) Explain the details about CPU Scheduling (8)

## **UNIT-III : MEMORY MANAGEMENT**

### **Part-A (2 Marks)**

1. List out the methods for handling deadlock.
2. Define virtual memory? Mention its advantages.
3. State monitor. What does it consists of?
4. Define the dispatch latency
5. What do you mean by page fault?
6. List out the types of Semaphores.
7. Show that mutual exclusion may be violated if the signal and wait operations are not executed atomically? Describe.
8. Define hold-and-wait
9. What is meant by binary semaphore?
10. Explain the algorithms available for deadlock avoidance?

### **Part-B (16 Marks)**

- 1.(i) Describe the Deadlock methods & Methods for Handling the deadlock. (8)
- (ii) Comparison between detection, Prevention and Avoidance methods of handling deadlock. . (8)
2. Explain the techniques for deadlock detection. (16)
3. Discuss the about of Management Strategies (16)
- 4 Explain Banker's algorithm for deadlock avoidance in detail with an example (16)
- 5.(i) Consider the following page reference string  
1,2,3,4,5,3,4,1,6,7,8,7,8,9,7,8,9,5,4,4,5,3.How many page faults would occur for the following replacement algorithms? Assume four frames are initially empty. i)LRU replacement ii)FIFO replacement iii)Optimal replacement (16)
- (ii) Explain swapping and contiguous memory allocation (8)

### **UNIT-IV : STORAGE AND FILE MANAGEMENT**

#### **Part-A (2 Marks)**

1. Define seek time and latency time.
2. What is File Organization and File Volatility?
3. Mention the major attributes of a file.
4. Define overlay.
5. State what is required to support dynamic allocation in contiguous memory allocation
6. What do you mean by page fault?
7. Differentiate internal and external fragmentation.
8. Why should we use virtual memory?
9. What is memory compaction?

Define seek time and latency time.

#### **Part-B (16 Marks)**

1. Explain briefly about File System Implementation & File System Interface (16)
2. Summarize the technical details of Mass Storage Structure & Windows, Linux and Android operating Systems. (16)
3. Compare the functionalities of FCFS,SSTF,CSAN and C-LOOK disk scheduling algorithms with a examples for each.. with neat diagram. (16)
4. Discuss the different file allocation methods with suitable example. (16)
- Explain the function of caching only serves (8)
- Explain the design principles of Linux system (8)

## **UNIT-V : CASE STUDY – LINUX SYSTEM**

### **Part-A (2 Marks)**

1. What are the basic components of Linux?
2. Does it help for a Linux system to have multiple desktop environments installed?
3. How can you find out how much memory Linux is using?
4. Mention the properties of UNIX OS?
5. What are the Resource Records in DNS?
6. Compare Secondary Zone and Stub Zone
7. Distinguish between Forward and Reverse Lookup
8. What is Virtualization?
9. Mention different types of server software do VMware provides.
10. Name different components used in VMware infrastructure.

### **Part-B (16 Marks)**

1. Explain the design principles of Linux system (16)
2. Describe in Detail about VM ware (16)
3. Discuss in detail about Virtualization. (16)
4. Manipulate the Setting Up Xen (16)
5. Explain the function of caching only serves (16)

**Course Faculty**

**HoD**