VALLIAMMAI ENGNIEERING COLLEGE
SRM Nagar, Kattankulathur – 603203.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Year and Semester   : II / IV

Section   : CSE – 1 & 2

Subject Code   : CS6401

Subject Name   : Operating System

Degree and Branch   : B.E – CSE

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UNIT - I

2 MARK QUESTIONS:

1. Define system process
2. What is an interrupt?
3. What is a system call?
4. What is an interrupt vector?
5. Define bootstrap program
6. Define operating system
7. What is a resource allocator?
8. What is Moore's law?
9. What is kernel?
10. Draw the storage device hierarchy
11. What is fault tolerant?
12. Define job pool
13. what are the types of operation in operating system ?
14. What is a privileged instruction?
15. What is a trap?
16. What is bitmap?
17. What is real time operating system?
18. What is boot disk?
19. Draw the system structure for unix
20. What is the layered approach in OS?

16 MARK QUESTIONS:

1. Explain in detail the modern computer system

2. Explain the abstract view of the components of a computer system

3. Explain Von Neumann architecture

4. Explain multiprocessor system

5. Explain operating system structure in detail

6. Explain computing environments

7. Explain open source operating system

8. Explain in detail the operating system services

9. Explain in detail operating system structure

10. Write about OS generation

UNIT- II

2 MARK QUESTIONS:

1. Define Process

2. What are the Process State

3. What Is PCB?

4. Define Threads.

5. What are the types of Schedulers?

6. What is Context Switch?

7. What is Co-operative Process?

8. Define IPC.

9. What is Remote procedure Calls?

10. Define threads.

11. What is multicore Programming?

12. Define Multithreading

13. What is critical section problem?

14. What is semaphores?

15. What is monitors?

16. What is preemptive Scheduling?

17. What is Non Preemptive Scheduling?

18. What are the scheduling Criteria?

19. What are the scheduling algorithm?

20. Define Dead Locks.

16 MARK QUESTIONS:

1. Explain the various process state

2. Explain the interprocess communication

3. Explain about remote procedure calls

4. Explain about Multi threading models

5. Consider the following set of processes with the length of the CPU burst time given in milliseconds

Process	Burst Time	Priority
P1	10	3
P2	1	1
P3	2	3
P4	1	4
P5	5	2

The processes are assumed to have arrived in the order p1,p2,p3,p4,p5 all at time 0.

a. Draw four Gantt charts illustrating the execution of these processes using FCFS,SJF,anon preemptive priority (a smaller priority number implies a higher priority)and RR (quantum=1)scheduling.

b. What is the turnaround time of each process for each of the scheduling algorithms

in part a?

c. What is the waiting time of each process for each of the scheduling algorithms in part a?

d. Which of the schedules in part a results in the minimal average waiting time?

6.Explain about various scheduling algorithms

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7.Explain in detail about the critical section problem

8.Explain in detail about semaphores and monitors

9.Expain about deadlock prevention and deadlock avoidance algorithms

10. Consider the following snapshot of a system

	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2	1	5	2	0
P1	1	0	0	0	1	7	5	0				
P2	1	3	5	4	2	3	5	6				
P3	0	6	3	2	0	6	5	2				
P4	0	0	1	4	0	6	5	6				

Answer the following question using banker's algorithm

a)What is the content of the matrix Need?

b)Is the system in a safe state?

c)If a request from process p1 arrives for (0,4,2,0) can the request be granted immediately?

UNIT- III

2 MARK QUESTIONS:

1. Define Memory Management Unit

2. What is Dynamic Loading?

3. What is Overlays?

4. Define Swapping

5. What is Paging?

6. Define segmentation.

7. What is Hit ratio?

8. What is TLB?

9. What is Virtual Memory?

10. What is demand paging?

11.How to calculate Effective access time in Demand Paging?

12.What is memory mapping approach?

13.What are the page replacement algorithm?

14.Compare LRU and Optimal Replacement Algorithm

15.Define Allocation Algorithm.

16.Compare the Global and Local Allocation?

17.What is Thrashing?

18.Consider a logical address space of eight pages of 1024 words each mapped onto a physical memory of 32 frames

a)How many bits are in the logical address?

b)How many bits are in the physical address?

19.Difference between internal and external fragmentation.

20.Difference between logical and physical address.

16 MARK QUESTIONS:

1. Explain in detail Contiguous Memory Allocation.
2. Explain in detail about segmentation.
3. Explain in detail about paging.
4. Explain in detail about segmentation with paging.
5. Describe the following allocation algorithms:
   a. First fit
   b. Best fit
   c. Worst fit
6. Given memory partitions of 100 KB, 500 KB, 200 KB, 300 KB, and 600 KB(in order), how would each off the first-fit, best-fit, and worst-fit algorithms place processes of 212 KB, 417 KB, 112 KB, and 426 KB (in order) ? Which algorithm makes the most efficient use of memory?

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7. Explain demand paging.
8. Explain page replacement algorithms.
9. Consider the following page-reference string:

   1,2,3,4,,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6

   How many page faults would occur for the following replacement algorithms, assuming two, three frames?

   Remember that all frames are initially empty, so your first unique pages will all cost one fault each.

   - LRU replacement
   - FIFO replacement
   - Optimal replacement
10. Explain in detail about Thrashing.

UNIT- IV

2 MARK QUESTIONS:

1.What is seek time?

2.what is Rotational latency?

3.What are the types of disk scheduling?

4.What is Physical formatting of the disk?

5.What is logical formatting of the disk?

6.What is boot block?

7.What is bad blocks?

8.What are the file attributes?

9.What are the File types?

10.What are the methods for Accessing the file?

11.Define single level directory.

12.Define Two-level directory.

13.What is distributed file system?

14. Write the structure of layered file system

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15. What is FCB.

16. What are the allocation methods for disk space?

17. What is bit vector?

18. What is polling?

19. Write down the Characteristics of I/O devices.

20. What is streams?

16 MARK QUESTIONS:

1. Explain in detail about disc scheduling algorithm.
2. Suppose that a disk drive has 5000 cylinders, numbered 0 to 4999. The drive is currently serving a request at cylinder 143, and the previous request was at cylinder 125. The queue of pending requests, in FIFO order, is

    86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130.

    Starting from the current head position, what is the total distance (in cylinders) that the disk arm moves to satisfy all the pending requests for each of the following disk-scheduling algorithms?

    a. FCFS
    b. SSTF
    c. SCAN
    d. LOOK
    e. C-SCAN
    f. C-LOOK

3. Explain in detail about disc management.
4. Explain in detail about directory structure.
5. Explain in detail about file sharing and protection.
6. Explain in detail about file system structure and implementation.
7. Explain in detail about allocation methods of disc.
8. Explain in detail about free space management.
9. Explain in detail about BUS structure.
10. Explain in detail about Kernel I/O sub system.

UNIT- V

2 MARK QUESTIONS:

1. Write about Linux Kernel system.

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2. Draw the components of the Linux system.
3. What are the three network layers in the Linux kernel system.
4. List down the components of a Linux System.
5. What are the three components of module support under Linux
6. What is buddy-heap algorithm?
7. What is domain name system?
8. What is virtualization?
9. Draw the architecture of Xen project.
10. What is VMware on Linux?
11. What is Linux multifunction server?
12. Define Fork .
13. What is kernel Synchronization in Linux?
14. What is Linux ex2fs file system?
15. Draw the device driver block structure in Linux
16. What is the purpose of block buffer cache?
17. What are the security groups in Linux?
18. What is protection mask?
19. What is firewall management?
20. What is static and dynamic linking?

16 MARK QUESTIONS:

1. Explain the basic concepts of the Linux system.
2. Explain system administration requirement for Linux system administrator.
3. Explain setting up a Linux multifunction server.
4. Explain local network services.
5. Explain Domain name systems.
6. Explain the basic concepts of Virtualization.
7. Explain in detail about setting up Xen.
8. Explain in detail about VM Ware on Linux Host and Adding Guest OS.
9. Explain in detail about Kernel modules in Linux systems.
10. Explain in detail about network structure and security in Linux.