**SYBBA(CA)- 403 – Operating System**

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| Sr.no | Chapter name |
| 1. | Introduction to operating system. |
| 2. | System structure. |
| 3. | Process management. |
| 4. | CPU scheduling . |
| 5. | Process synchronization. |
| 6. | Deadlock. |
| 7. | Memory management. |
| 8. | File system. |
| 9. | I/O system. |
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|  |  |

# ASSIGNMENT 1

1. Explain simple structure of operating system
2. Explain layer structure of operating system
3. Write short note on operating system
4. Define the term operating system
5. Explain services provided by OS
6. What is multiprogramming
7. Explain types of OS in details

# ASSIGNMENT 2

1. What is purpose of command interpreter
2. What do you mean by GUI (Graphic User Interface)
3. List and explain system call related to process and job control
4. Define system call
5. Explain types of system program and system call

**ASSIGNMENT 3**

1. Explain process control block in details with the help of diagram
2. Describe process state with suitable diagram
3. What is context switch
4. Explain share memory and message queue
5. Write short note on IPC(Inter Process Communication)
6. Difference between scheduler ie. Short, medium ,long
7. Write short note on process scheduling queue
8. Define process scheduling

# ASSIGNMENT 4

1. Difference between preemptive and non-preemptive scheduling
2. List and explain scheduling criteria and what is CPU scheduler
3. Explain multilevel feedback queue 4. Write short note on multilevel queue scheduling

5.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | A.T | B.T | | Priotity |
| P1 | 0 | 10 | | 3 |
| P2 | 1 | 8 | | 2 |
| P3 | 2 | 7 | | 1 |
| P4 | 3 | 5 | | 4 |
| P5 | 4 | 12 | | 5 |
| P6 | 5 | 6 | | 7 |
| P7 | 6 | 4 | | 6 |
| P8 | 7 | 3 | | 8 |
| P9 | 8 | 2 | | 10 |
| P10 | 9 | 1 | 9 | |

1. SFS?
2. SJF?
3. Priority?
4. 4) RR?

I)AWT ?

II)ATT ?

# ASSIGNMENT 5

1. What is semaphores and it’s types
2. Describe solution for critical section program
3. Describe in detail Dining philosopher
4. Explain Reader-writer
5. What is rest condition

# ASSIGNMENT 6

1. What is mean by deadlock
2. List and explain necessary condition or deadlock occurrence
3. Explain different methods for recovery from deadlock
4. Explain deadlock prevention strategies
5. Discuss characteristics of deadlock
6. Consider a process P0 ,P1,P2,P3,P4 and three resources R1,R2,R3 types R1=12, R2=7 , R3=9 allocation and max demand matrix is given below

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Process** | **Allocation** | | | **maximum** | | | **available** | | |
|  | R1 | R2 | R3 | R1 | R2 | R3 | R1 | R2 | R3 |
| P0 | 3 | 2 | 1 | 7 | 3 | 2 |  |  |  |
| P1 | 2 | 1 | 0 | 5 | 2 | 4 |  |  |  |
| P2 | 1 | 2 | 3 | 3 | 2 | 5 |  |  |  |
| P3 | 1 | 0 | 1 | 1 | 0 | 2 |  |  |  |
| P4 | 2 | 0 | 0 | 2 | 1 | 2 |  |  |  |

* 1. What are the contain of need matrix
  2. Is the system in safe sequence If yes give safe sequence

# ASSIGNMENT 7

1. What is framentation ? explain external and internal fragmentation.
2. Define the terms

1.logical address.

2.physical address.

3.static loading.

4.dynamic loading.

5.address binding.

6.baledy’s anamly

Page fault.

1. Consider the following reference string 9,2,3,4,2,5,6,8,3,2,1,5,9 No .of frames are 4 .

Calculate the page fault and page hint for the following page replacement algorithm

1) FIFO

2) LRU

3) MRU

4) OPTIMAL

# ASSIGNMENT 8

1. Explain the direct access method or write a short note on direct  memory access.
2. Assume there are total 200 task each surface of a disk if request queue is 168,42,22,94,170,12,5,initial position of head is an 60 apply all algorithm and calculate total  head movement.

1)FCFS

2) SSTF

3) SCAN

4)C-SCAN

5) LOOK

6)C-LOOK

# ASSIGNMENT 9

1. Explain free space management.

2. Differentiate between sequential access method and direct access method.

3. List and explain different attribute related to file .

4. Explain allocation method in detail .