

II-B.TECH(R-22) I-SEM I-MID EXAMINATIONS, OCTOBER 2024

**SUBJECT: OPERATING SYSTEMS**

BRANCH: CSE, CSM, CSD, CS, IT MARKS:30 M

DATE: 03-10-2024 TIME: 10 AM to 12:00 PM

**Answer all questions in Part-A & Answer any FOUR question in Part-B**

**Part-A 5\*2=10M**

**BTL CO**

Q1. **Define** operating system.**List** the objectives of operating system. 1 **[CO1]**

Q2. **Distinguish** between process and thread. 4 **[CO1]**

Q3. **What** is preemptive and non-preemptive scheduling algorithm. 1 **[CO2]**

Q4**. Define** safe state and unsafe state. 1 **[CO2]**

Q5. **Write** about critical-section problem. 6 **[CO3]**

**Answer any four questions**

**Part-B 4\*5=20**

Q6. **Discuss** about the services of Operating System. 6 **[CO1]**

Q7. **Explain** Simple And Layered Approach of operating system in detail. 5 **[CO1]**

Q8. Following is the snapshot of a CPU

|  |  |  |
| --- | --- | --- |
| **Process** | **Arival Time** | **Burst Time** |
| P1 | 0 | 10 |
| P2 | 1 | 29 |
| P3 | 2 | 3 |
| P4 | 3 | 7 |

Draw the Gantt chart and **find** the Turn Around Time and Waiting Time of The jobs for First-come-First-Serve Scheduling Algorithm(FCFS). 1 **[CO2]**

Q9. **What** is Deadlock? **Explain** Deadlock avoidance process using resource allocation Graph?

1,5 **[CO2]**

Q10. **Explain** about fork( ) and exec( ) system call with suitable example. 5 **[CO1]**

Q11. **Define** ProcessSynchronization. Briefly **explain** the types of Process Synchronization. 1, 5 **[CO3]**

**SCHEME OF EVALUATION**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.NO** | **THEORY** | **MARKS** | **TOTAL** |
| 1 | **Part-A**  **Define** operating system. **List** the objectives of operating system. | 2 | 10 |
| 2 | **Distinguish** between process and thread. | 2 |
| 3 | **What** is preemptive and non-preemptive scheduling algorithm. | 2 |
| 4 | **Define** safe state and unsafe state. | 2 |
| 5 | **Write** about critical-section problem. | 2 |
| 6 | **Part-B**  **Discuss** about the services of Operating System. | 5 |  |
| 7 | **Explain** Simple And Layered Approach of operating system in detail. | 5 |  |
| 8 | Following is the snapshot of a CPU   |  |  |  | | --- | --- | --- | | **Process** | **Arival Time** | **Burst Time** | | P1 | 0 | 10 | | P2 | 1 | 29 | | P3 | 2 | 3 | | P4 | 3 | 7 |   Draw the Gantt chart and **find** the Turn Around Time and Waiting Time of The jobs for First-come-First-Serve Scheduling Algorithm(FCFS). | 5 | 20 |
| 9 | **What** is Deadlock? **Explain** Deadlock avoidance process using resource allocation Graph? | 5 |  |
| 10 | **Explain** about fork( ) and exec( ) system call with suitable example. | 5 |  |
| 11 | **Define** ProcessSynchronization. Briefly **explain** the types of Process Synchronization. | 5 |  |
| **TOTAL MARKS** | | 30 | **30** |