***RG 22Regulations***

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**BRANCHES:CSE, CSE(DS)&CSE(CS)YR/SEM: II/II**

**COURSE TITLE: OPERATING SYSTEMS ACADEMIC YEAR: 2023-24**

**FACULTY: Mr. T SAI PRASAD REDDY ,Mrs.DIVYA SHRUTHI,Mr.U.SATHYANARAYANA**

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| **OS QUESTION BANK** |

**UNIT-I**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No** | **Question** | **CO** | **BL** | **Marks** |
| **1** | Explain different functions of operating system? | **1** | **2** | **12** |
| **2** | Explain the different services provided by an Operating System? | **1** | **2** | **12** |
| **3** | Explain different types of system calls? | **1** | **2** | **12** |
| **4** | Explain about user mode and kernel mode with a neat diagram? | **1** | **2** | **12** |
| **5** | Define Operating System and explain different OS operations? | **1** | **2** | **12** |
| **6** | Explain the evolution of operating systems? | **1** | **2** | **12** |
| **7** | Explain different user and operating systems interface? | **1** | **2** | **12** |
| **8** | Explain OS structure with a neat diagram? | **1** | **2** | **12** |
| **9** | Explain OS layer structure with a neat diagram? | **1** | **2** | **12** |

**UNIT-II**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No** | **Question** | **CO** | **BL** | **Marks** |
| **1** | Explain with a neat diagram various Process States? | **2** | **3** | **12** |
| **2** | Explain with a neat diagram the concept of Scheduling Queues? | **2** | **2** | **12** |
| **3** | Describe briefly about context switch&and the importance of Process Control Block?with a neat diagram? | **2** | **3** | **12** |
| **4** | Consider the following five processes, with the length of the CPU burst time given in milliseconds. Find Average Waiting Time and Turnaround time for given process using FCFS algorithm?   |  |  | | --- | --- | | Process | Burst Time | | P0 | 5 | | P1 | 24 | | P2 | 16 | | P3 | 10 | | P4 | 3 | | **2** | **3** | **12** |
| **5** | What is Semaphore? Explain its implementation for providing process synchronization? | **2** | **2** | **12** |
| **6** | Define process ?Consider the following five processes, with the length of the CPU burst time given in milliseconds. Find Average Waiting Time and Turnaround time for given process using SJF algorithm (non-preemptive)?   |  |  | | --- | --- | | Process | Burst Time | | P1 | 5 | | P2 | 24 | | P3 | 16 | | P4 | 10 | | P5 | 3 | | **2** | **3** | **12** |
| **7** | What is mean by a critical section? Explain petersons Solution with example? | **2** | **2** | **12** |
| **8** | Explain SJF and priority algorithms with examples? | **2** | **2** | **12** |
| **9** | What is mean by Thread? Explain Different Thread models? | **2** | **2** | **12** |
| **10** | Explain Round robin Algorithm with Example? | **2** | **2** | **12** |

**MODULE-III**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1** | Explain in detail about Paging? | **3** | **2** | **12** |
| **2** | Explain Segmentation Technique in detail with an Example? | **3** | **2** | **6** |
| **3** | Explain in detail about the structure of page table? | **3** | **2** | **12** |
| **4** | Given page reference string with 3 Page frames:  **7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1**  Compare the number of page fault using LRU, FIFO and Optimal page replacement algorithm. | **3** | **2** | **12** |
| **5** | Explain how many page faults occur using Optimal and LFU algorithms for the following reference string, with 3Page frames  **2,3,2,1,5,2,4,5,3,2,5,2** | **3** | **2** | **12** |
| **6** | Explain with an example least recent used page replacement policy. | **3** | **2** | **12** |
| **7** | Explain internal fragmentation and external fragmentation with a neat diagram. | **3** | **2** | **12** |
| **9** | Explain briefly about deadlock detection with example? | **3** | **2** | **12** |
| **10** | Explain with an example the Banker’s algorithm for deadlock avoidance? | **3** | **2** | **12** |
| **11** | Explain briefly about deadlock prevention with example? | **3** | **2** | **12** |
| **12** | Explain Deadlock Conditions with Examples? | **3** | **2** | **12** |

**MODULE-IV**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1** | Explain in detail about file and file structure? | **4** | **2** | **12** |
| **2** | Explain various files accessing methods? | **4** | **2** | **6** |
| **3** | Explain file attributes and its operations? | **4** | **2** | **12** |
| **4** | What are different allocation methods in file? Explain? | **4** | **2** | **12** |
| **5** | Explain about the structure of single and two level directories? | **4** | **2** | **12** |
| **6** | Explain Disk Structure with a neat diagram? | **2** | **4** | **12** |
| **7** | Explain Disk Scheduling Algorithms with Examples? | **2** | **2** | **6** |
| **8** | Explain RAID Levels with Examples? | **2** | **3** | **12** |
| **9** | Explain briefly about SCAN and CSCAN disk scheduling? | **2** | **3** | **12** |
| **10** | Explain the features and functionality of RAID in detail? | **2** | **3** | **12** |

**MODULE-V**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1** | Explain Principles of Protection with an example? | **5** | **2** | **12** |
| **2** | Explain Goals of Protection with an Example? | **5** | **2** | **12** |
| **3** | ExplainDomain of Protection with an Example? | **5** | **2** | **12** |
| **4** | Explain different types of program Threats? | **5** | **2** | **12** |
| **5** | Explain different types of System Threats? | **5** | **2** | **6** |
| **6** | Explain different types of NetworkThreats? | **5** | **2** | **12** |
| **8** | What is the purpose of access matrix? Explain about access matrix with a neat diagram? | **5** | **2** | **12** |
| **9** | Explain the implementation of access matrix with an example? | **5** | **2** | **12** |
| **10** | Explain domain structure and implementation? What are the benefits and limits of domain implementation? | **5** | **2** | **12** |