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| LOGO.jpg | **GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY**  (**AN AUTONOMOUS INSTITUTION**)  **(Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu)**  **(Accredited by NAAC with “A” Grade, NBA (EEE,ECE &ME) & ISO9001:2008CertifiedInstitution)** |
| **QUESTIONBANK(DESCRIPTIVE)**  **Subject Name with Code: OPERATING SYSTEMS (22A0513T)**  **Course & Branch: B.TECH CSE, CSE(DS)&CSE(CS) Year& Semester: II-IIRegulation: RG22** | |

**UNIT - I**

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| **S.No.** | **Question** | **[BT Level] [CO][ Marks]** |
| **2 Marks Questions (Short)** | | |
|  | Define Operating System? | L1/CO1/2M |
|  | What are the Operations of Operating System? | L1/CO1/2M |
|  | Explain Different Types of Operating System? | L1/CO1/2M |
|  | What are the Operating System Functions? | L1/CO1/2M |
|  | What is the Kernel? | L1/CO1/2M |
|  | What is meant by Multiprogramming? | L3/CO1/2M |
|  | Explain different Operating System Services? | L1/CO1/2M |
|  | What is mean by System Calls? | L3/CO1/2M |
|  | What is a System Program? | L3/CO1/2M |
|  | What are the various OS components? | L3/CO1/2M |
| **Descriptive Questions (Long)** | | |
|  | Explain different functions of operating system? | L2/CO1/12M |
|  | Explain the different services provided by an Operating System? | L2/CO1/12M |
|  | Explain different types of system calls? | L2/CO1/12M |
|  | Explain about user mode and kernel mode with a neat diagram? | L1/CO1/12M |
|  | Define Operating System and explain different OS operations? | L2/CO1/12M |
|  | Explain the evolution of operating systems? | L2/CO1/12M |
|  | Explain different user and operating systems interface? | L2/CO1/12M |
|  | Explain OS structure with a neat diagram? | L2/CO1/12M |
|  | Explain OS layer structure with a neat diagram? | L2/CO1/12M |

**UNIT - II**

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| **S.No.** | **Question** | **[BT Level] [CO][ Marks]** |
| **2 Marks Questions (Short)** | | |
|  | What is a process? | L3/CO2/2M |
|  | What is process control block? | L1/CO2/2M |
|  | Define Thread? | L3/CO2/2M |
|  | Explain about Operations on Processes? | L1/CO2/2M |
|  | What is multithreading programming? | L1/CO2/2M |
|  | Define CPU scheduling? | L1/CO2/2M |
|  | Describe Critical Section problem? | L3/C03/2M |
|  | Define Synchronization Hardware? | L3/CO3/2M |
|  | What is meant by semaphore? | L1/CO3/2M |
|  | Explain about Mutex Locks? | L1/CO3/2M |
| **Descriptive Questions (Long)** | | |
|  | Explain with a neat diagram various Process States? | L1/CO2/12M |
|  | Explain with a neat diagram the concept of Scheduling Queues? | L2/CO2/12M |
|  | Describe briefly about context switch&and the importance of Process Control Block?with a neat diagram? | L2/CO2/12M |
|  | 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 | | L3/CO2/12M |
|  | What is Semaphore? Explain its implementation for providing process synchronization? | L3/CO3/12M |
|  | 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 | | L2/CO2/12M |
|  | What is mean by a critical section? Explain petersons Solution with example? | L3/CO3/12M |
|  | Explain SJF and priority algorithms with examples? | L2/CO2/12M |
|  | What is mean by Thread? Explain Different Thread models? | L3/CO2/12M |
|  | Explain Round robin Algorithm with Example? | L2/CO2/12M |

**UNIT - III**

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| **S.No.** | **Question** | **[BT Level] [CO][ Marks]** |
| **2 Marks Questions (Short)** | | |
|  | Define Deadlock? | L1/CO4/2M |
|  | Define Deadlock Prevention? | L3/CO4/2M |
|  | Define Deadlock Avoidance? | L1/CO4/2M |
|  | What do you mean by best fit? | L4/CO4/2M |
|  | What is virtual memory? | L4/CO4/2M |
|  | What is meant by Swapping? | L4/CO4/2M |
|  | Define Resource Allocation Graph? | L4/CO4/2M |
|  | Define virtual memory? | L4/CO4/2M |
|  | What is meant by External Fragmentation and Internal Fragmentation? | L3/CO4/2M |
|  | Define Thrashing? | L4/CO4/2M |
| **Descriptive Questions (Long)** | | |
|  | Explain in detail about Paging? | L2/CO4/12M |
|  | Explain Segmentation Technique in detail with an Example? | L3/CO4/12M |
|  | Explain in detail about the structure of page table? | L2/CO4/12M |
|  | 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. | L4/CO4/12M |
|  | 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** | L2/CO4/12M |
|  | Explain with an example least recent used page replacement policy. | L4/CO4/12M |
|  | Explain internal fragmentation and external fragmentation with a neat diagram. | L3/CO4/12M |
|  | Explain briefly about deadlock detection with example? | L2/CO4/12M |
|  | Explain with an example the Banker’s algorithm for deadlock avoidance? | L3/CO4/12M |
|  | Explain briefly about deadlock prevention with example? | L3/CO4/12M |
|  | Explain Deadlock Conditions with Examples? | L3/CO4/12M |

**UNIT - IV**

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| **S.No.** | **Question** | **[BT Level] [CO][ Marks]** |
| **2 Marks Questions (Short)** | | |
|  | What is a file? | L4/CO5/2M |
|  | Define Disk Structure? | L2/CO5/2M |
|  | What are Disk Scheduling Algorithms | L4/CO5/2M |
|  | Define file attributes and list of file Attributes? | L2/CO5/2M |
|  | What are the various file operations? | L3/CO5/2M |
|  | Define RAID? | L2/CO5/2M |
|  | What are the information associated with an open file? | L3/CO5/2M |
|  | What is Directory? | L2/CO5/2M |
|  | What are the operations that can be performed on a directory? | L2/CO5/2M |
|  | What are Directory Operations? | L2/CO5/2M |
| **Descriptive Questions (Long)** | | |
|  | Explain in detail about file and file structure? | L2/CO5/12M |
|  | Explain various files accessing methods? | L2/CO5/12M |
|  | Explain file attributes and its operations? | L2/CO5/12M |
|  | What are different allocation methods in file? Explain? | L2/CO5/12M |
|  | Explain about the structure of single and two level directories? | L2/CO5/12M |
|  | Explain Disk Structure with a neat diagram? | L2/CO5/12M |
|  | Explain Disk Scheduling Algorithms with Examples? | L2/CO5/12M |
|  | Explain RAID Levels with Examples? | L2/CO5/12M |
|  | Explain briefly about SCAN and CSCAN disk scheduling? | L2/CO5/12M |
|  | Explain the features and functionality of RAID in detail? | L2/CO5/12M |

**UNIT - V**

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| **S.No.** | **Question** | **[BT Level] [CO][ Marks]** |
| **2 Marks Questions (Short)** | | |
|  | What are the objectives of protection? | L2/CO6/2M |
|  | What are the principles of protection? | L1/CO6/2M |
|  | Define Access Matrix | L1/CO6/2M |
|  | What is protection domain? | L1/CO6/2M |
|  | Define security. | L2/CO6/2M |
|  | Define authentication. | L1/CO6/2M |
|  | What are the program threats? | L1/CO6/2M |
|  | What are the system threats? | L2/CO6/2M |
|  | Define security problem? | L1/CO6/2M |
|  | What are the Network Threats? | L1/CO6/2M |
| **Descriptive Questions (Long)** | | |
|  | Explain Principles of Protection with an example? | L2/CO6/12M |
|  | Explain Goals of Protection with an Example? | L2/CO6/12M |
|  | Explain Domain of Protection with an Example? | L2/CO6/12M |
|  | Explain different types of program Threats? | L2/CO6/12M |
|  | Explain different types of System Threats? | L3/CO6/12M |
|  | Explain different types of Network Threats? | L2/CO6/12M |
|  | What is the purpose of access matrix? Explain about access matrix with a neat diagram? | L2/CO6/12M |
|  | Explain the implementation of access matrix with an example? | L2/CO6/12M |
|  | Explain domain structure and implementation? What are the benefits and limits of domain implementation? | L2/CO6/12M |

**Signature of the Staff:**

**Signature of Department Academic Committee Member 1:**

**Signature of Department Academic Committee Member 2:**

**Signature of Department Academic Committee Member 3:**