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| Hall Ticket No.: |  |  |  |  |  |  |  |  |  |  |

**SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY**

**SRIT R20**

**(AUTONOMOUS)**

III B. Tech I Sem – Continuous Internal Examinations II – Dec 2022 (AY: 2022-2023)

**OPERATING SYSTEMS**

**[R204GA05503]**

(Computer Science & Engineering)

**Time: 2 hours** S**ET – 1 Max. Marks: 30**

**Answer the following questions**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Q. No** | | **Questions** | | | **Unit** | **Marks** | **CO** | **Cognitive Level** |
| 1 | a) | Define deadlock. | | | III | 2 | CO1 | Remember |
| b) | Classify dimensions of application I/O interface. | | | IV | 2 | CO1 | Remember |
| c) | List the goals of protection. | | | V | 2 | CO1 | Remember |
| **UNIT-III** | | | | | | | | |
| 2 | a) | Explain about the banker’s algorithm for deadlock avoidance. | | | | 4 | CO4 | Understand |
| b) | Describe any two solutions of recovery from deadlock. | | | | 4 | CO4 | Understand |
| **OR** | | | | | | | | |
| 3 |  | | What are the different methods of handling deadlock? | | | 8 | CO4 | Understand |
| **UNIT-IV** | | | | | | | | |
| 4 |  | | | Suppose that a disk drive has 5000 cylinders, numbered 0 to 4999. The current head position is at cylinder 143. The queue of pending requests is: 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130. What is the total distance that the disk arm moves to satisfy all the pending requests for each of the following Disk scheduling algorithms? i) SSTF ii) SCAN | | 8 | CO5 | Apply |
| **OR** | | | | | | | | |
| 5 |  | | | Suppose that a disk drive has 5000 cylinders numbered 0 to 4999. The drive is currently serving a request at cylinder 143. The queue of pending requests in FIFO order 86,1470,913,1774,948,1509, 1022, 1750, 130 starting from current head position. What is the total distance that disk arm moves to satisfy the entire pending request for FCFS and SSTF disk scheduling algorithm? | | 8 | CO5 | Apply |
| **UNIT-V** | | | | | | | | |
| 6 |  | | | Illustrate various access matrix implementation techniques. | | 8 | CO6 | Understand |
| **OR** | | | | | | | | |
| 7 |  | | | Explain about domains of protection. | | 8 | CO6 | Understand |

**Prepared by**

Name of the Faculty: Mr. M. Narasimhulu, Assistant Professor, CSE.

Signature of the Faculty:

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**OPERATING SYSTEMS**

**[R204GA05503]**

**(**Computer Science & Engineering)

**Time: 2 hours** S**ET – 2 Max. Marks: 30**

**Answer the following questions**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Q. No** | | **Questions** | | **Unit** | **Marks** | **CO** | **Cognitive Level** |
| 1 | a) | State resource allocation graph. | | III | 2 | CO1 | Understand |
| b) | Compute the average latency of a disk spindle rotates with 7200 RPM. | | IV | 2 | CO1 | Understand |
| c) | How security levels are measured? | | V | 2 | CO1 | Remember |
| **UNIT-III** | | | | | | | |
| 2 |  | Consider the table given below for a system, find the need matrix and the safety sequence, using Banker’s algorithm. Resource – 3 types | | | 8 | CO4 | Apply |
|  | A(10 instances)  B (5 instances)  C (7 instances) |  | |
| **OR** | | | | | | | |
| 3 |  | A system has four processes and five resources. The current allocation and maximum needs are as follows:    Find the minimum Available matrix that makes the system in safe state. | | | 8 | CO4 | Apply |
| **UNIT-IV** | | | | | | | |
| 4 |  | Explain the different disk scheduling algorithms with their comparisons. | | | 8 | CO5 | Understand |
| **OR** | | | | | | | |
| 5 | a) | Explain the different components of I/O Hardware and different layers of I/O Software. | | | 4 | CO5 | Understand |
| b) | What is File system? Explain various File Access Methods. | | | 4 | CO5 | Understand |
| **UNIT-V** | | | | | | | |
| 6 |  | Illustrate role-based access control with suitable diagrams. | | | 8 | CO6 | Understand |
| **OR** | | | | | | | |
| 7 |  | Illustrate encryption methods with suitable scenarios. | | | 8 | CO6 | Understand |

**Prepared by**

Name of the Faculty: Mr. M. Narasimhulu, Assistant Professor, CSE.

Signature of the Faculty: