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**SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY**

**MODEL QUESTION PAPER**

**SRIT R20**

**(AUTONOMOUS)**

III B. Tech I Sem – Semester End Examinations – Regular – Dec 2022

**OPERATING SYSTEMS**

**[R204GA05503]**

**(**Computer Science and Engineering)

**Time: 3 hours** **Max. Marks: 60**

**PART-A**

(Compulsory Question)

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 |  | | Answer the following: (10 X 02 = 20 Marks) | |
|  | a) | | How parameters can pass to system calls? | |
|  | b) | | Give an example of a Process State Transition diagram. | |
|  | c) | | What is the basic function of paging? | |
|  | d) | | Define trapdoor. | |
|  | e) | | Define system threats. | |
| **PART-B**  (Answer all five units, 5 X 10 = 50 Marks) | | | | |
|  | | | | |
| **UNIT-1** | | | | |
| 2 | a) | Explain about the dual mode operation in OS with a neat block diagram. | | **[5M]** |
|  | b) | Describe multiprogramming and Multi-tasking systems. | | **[5M]** |
| (OR) | | | | |
| 3 | Explain how operating systems used in a variety of computing environments. | | | **[10M]** |
|  |
| **UNIT-2** | | | | |
| 4 | Construct Critical section problem with a suitable example. | | | **[10M]** |
|  |
| (OR) | | | | |
| 5 | Write a C program to create a child process that display list of files in current working directory. | | | **[10M]** |
|  |
| **UNIT-3** | | | | |
| 6 | Given six memory partitions of 300 KB, 600 KB, 350 KB, 200 KB, 750 KB, and 125 KB (in order), how would the first-fit, best-fit, and worst-fit algorithms place processes of size 115 KB, 500 KB, 358 KB, 200 KB, and 375 KB (in order)? Rank the algorithms in terms of how efficiently they use memory. | | | **[10M]** |
|  |
| (OR) | | | | |
| 7 | Explain any two solutions of Recovery from Deadlock | | | **[10M]** |
|  |
| **UNIT-4** | | | | |
| 8 | 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?  a) SSTF b) SCAN | | | **[10M]** |
|  |
| (OR) | | | | |
| 9 | What is File system and what are the various File access methods? Explain. | | | **[10M]** |
|  |
| **UNIT-5** | | | | |
| 10 | Illustrate role-based access Control with suitable diagrams. | | | **[10M]** |
|  |
| (OR) | | | | |
| 11 | Explain about access matrix in detail. | | | **[10M]** |
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