SAVEETHA SCHOOL OF ENGINEERING

SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES COMPUTER SCIENCE AND ENGINEERING PROGRAMME

**CSA04 OPERATING SYSTEMS**

**DAY 4 ASSIGNMENT QUESTIONS**

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| S.NO | QUESTION |
| 1 | Consider a file system with 2048-byte blocks and 32-bit disk and file block pointers. Each file  has 12 direct pointers, a singly-indirect pointer, a doubly-indirect pointer, and a triply-indirect  pointer. How large of a disk can this file system support? |
| 2 | Suppose there is a 1TB disk, with 4KB disk blocks. How big is the file allocation table in this case? Would it be feasible to cache the entire file allocation table to improve performance? |
| 3 | There are 200 tracks on a disk platter and the pending requests have come in the order 36, 69, 167, 76, 42, 51, 126, 12 and 199. Assume arm is located at the 100th track and moving towards track 200. If the sequence of disk access is 126,167,199,12,36,42, 51,69 and 76, determine the disk access scheduling policy used. |
| 4 | Consider a disk queue with requests for I/O to blocks on cylinders 94, 163, 37, 142, 18, 183, 75, 77. The head is initially at cylinder number 63 moving towards larger cylinder numbers on its servicing pass. The cylinders are numbered from 0 to 220. Calculate the total head movement (in number of cylinders) incurred using any four disk scheduling algorithms. |
| 5 | List the order in which the following requests for a given cylinder number will be serviced for  each of the different disk scheduling algorithms: 11, 15, 18, 6, 13, 7, 5, and 8. For those algorithms that require assumptions about the initial position of the disk head, assume that the disk head begins at position 9 and is moving in an upwards direction. |