

Quiz 6
Operating Systems and Networks
IIT Hyderabad
Time: 30 minutes; Max. Marks: 24

Note: Give a brief and correct answer. **Mention your name and roll number on the answer sheet. Answer the question after writing the FIRST 10 WORDS OF THE QUESTION ALONG WITH THE QUESTION NUMBER in the answer sheet.**

1. What is the cause of thrashing ? How does the system detect thrashing ? Once it detects thrashing, what can the system do to eliminate this problem ? [6]
2. Discuss the positive and negative aspects of inverted page table approach as compared to multi-level page tables. [6]
3. Assume a page size of 4Kbytes and that a page table entry takes 4 bytes, how many levels of page tables would be required to map a 64-bit address space, if the top level page fits into a single page ? [6]
4. A computer has a cache, main memory, and a disk used for virtual memory. If a referenced word is in cache, 20 nsec are required to access it. If it is in main memory but not in cache, 60 nsec are needed to load into the cache, and then the reference is started again. The cache hit ratio is 90%. What is the effective access time?[6]