Memory management quiz

Total points 22/30

The respondent's email (**cs20btech11063@iith.ac.in**) was recorded on submission of this form.

✓ Consider the reference string for page accesses as 1, 2, 3, 4, 5, 1, 2, 3, 4, 5. Assume that we have 3 frames in our system. Find the total number of page faults for LRU (least recently used) page-replacement policy. 2/2

10 ✓

✓ Which of the following setup cannot support shared memory. 2/2

- ○ 2-level page table
- ○ Hashed page table
- ◉ Inverted page table ✓
- ○ 1-level page table

✗ In a system with paging, what should be done by an OS so that it can directly read the value stored at a given physical address. ···/4

It should be related to frame number from page table.
It should be appended from page number and frame number. AFter getting frame number and offset we can arrive at proepr location

✗ Consider a process size of 35425 bytes and a page size of 1KB. Total number of pages required for the process is: ···/3

36 ✗

Correct answer

35

✓ Which of these is generally unsupported in mobile systems 2/2

- ○ Paging
- ○ Cache
- ◉ Swapping ✓
- ○ All are supported

✓ Paging might suffer from which of the following 2/2

- ◉ Internal fragmentation ✓
- ○ External fragmentation

Arrange them in the order of their access times

	CPU registers	Disk or secondary storage	Memory	Cache	Score	
1 (fastest)	◉	○	○	○	1/1	✓
2	○	○	○	◉	1/1	✓
3	○	○	◉	○	1/1	✓
4 (slowest)	○	◉	○	○	1/1	✓

✓ Compared to 1-level page tables, 2-level page tables help to 2/2

- ○ Increase the total virtual memory of the system
- ◉ Reduce the memory required for page tables ✓
- ○ Reduce the number of bits for each page table entry
- ○ Faster memory access

✓ Consider the reference string for page accesses as 1, 2, 3, 4, 5, 1, 2, 3, 4, 5. Assume that we have 3 frames in our system. Find the total number of page faults for MRU (most recently used) page-replacement policy. 3/3

7 ✓

✓ Demand paging makes use of the following control bit of page table entry 2/2

- ◉ Valid ✓
- ○ Write
- ○ Accessed
- ○ User Mode bit

✓ Which of the following is correct (page directory is level-1 and page table is level-2 page tables) 2/2

- ◉ Each process has its own page directory and page table ✓
- ○ Each process has a separate page table, but page directory is common to all processes
- ○ Page directory and page table for all processes are common
- ○ None of these

✗ Which of these hardware support is not required for implementing paging

1/2

- ○ Page table base register (like CR3 in Intel processors)
- ◉ TLB ✗
- ○ Paging enabled memory chip
- ○ Memory management unit

Correct answer

- ◉ Paging enabled memory chip