Unit 11 - Week 10

Assignment 10

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-08, 23:59 IST.

1) It is always beneficial in terms of timing efficiency to have demand paging than to load the pages from disk right away on program startup? *1 point*

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False

2) Which of the following is true about demand paging? *1 point*

- It requires hardware support to implement demand paging
- It can be completely implemented in software.
- Sum total of the number of valid pages in all the page tables still can't exceed total number of memory frames
- Sum total of the number of valid pages in all the page tables still can now exceed total number of memory frames.

No, the answer is incorrect.
Score: 0
Accepted Answers:
It can be completely implemented in software.
Sum total of the number of valid pages in all the page tables still can now exceed total number of memory frames.

3) In terms of locality select the correct options for the memory locations in the following program. *1 point*

```
    int sum = 0;
    for (int i = 0; i < 1000; i++)
    {
        sum = sum + arr[i];
    }
```

- sum has temporal locality
- i has temporal locality
- elements of arr has temporal locality
- elements of arr has spatial locality

No, the answer is incorrect.
Score: 0
Accepted Answers:
sum has temporal locality
i has temporal locality
elements of arr has spatial locality

4) If the memory access time is denoted by 'ma' and 'p' is the probability of a page fault (0 <= p <= 1) caused by the swapped out pages. Then the access time in expectation for a demand paging enabled memory is? *1 point*

- p x ma + (1-p) x page fault time
- ma + page fault time
- (1-p) x ma + p x page fault time
- ma + p x page fault overhead time

No, the answer is incorrect.
Score: 0
Accepted Answers:
(1-p) x ma + p x page fault time
ma + p x page fault overhead time

5) Select all the correct statements true for the page replacement policy? *1 point*

- 2nd chance algorithm is an approximation for LRU algorithm
- Nth chance algorithm is a better approximation for LRU algorithm, where N > 2
- LRU is itself a heuristic for the optimal page replacement algorithm

No, the answer is incorrect.
Score: 0
Accepted Answers:
2nd chance algorithm is an approximation for LRU algorithm
Nth chance algorithm is a better approximation for LRU algorithm, where N > 2
LRU is itself a heuristic for the optimal page replacement algorithm

6) Which of the following synchronization abstractions (or their equivalent) are used in xv6? *1 point*

- Mutex Lock
- Conditional variables
- Semaphores
- Monitors

No, the answer is incorrect.
Score: 0
Accepted Answers:
Mutex Lock
Conditional variables

7) Thrashing _____ the CPU utilization. *1 point*

- increases
- keeps constant
- decreases

No, the answer is incorrect.
Score: 0
Accepted Answers:
decreases

8) When is a process said to be thrashing? *1 point*

- it spends a lot of time executing, rather than paging
- it spends a lot of time paging than executing
- it has lots of misses in terms of pages prefetched by OS
- it has lots of hits in terms of pages prefetched by OS

No, the answer is incorrect.
Score: 0
Accepted Answers:
it spends a lot of time paging than executing

9) The working set model is used to estimate the average number of frames a job will need in memory in order to run smoothly without causing thrashing. *1 point*

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False