CSL 3030 Quiz 2

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Problems

These are long answer type questions. Please provide step-by-step procedure to the solutions. Final answer without any justification wont be considered for evaluation.

A computer system implements 4 kilobyte pages and a 32-bit physical address space. Each page table entry contains a valid bit, a dirty bit, a reference bit, three permission bits, and the translation. If the maximum size of the page table of a process is 26 maga bytes, the length of the virtual address supported by the system is _____ bits.

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Consider a system with 128MB main memory and 32-bit virtual address space. What will be the page table size for conventional and inverted page table considering the page size is 4KB? Assume memory is byte addressable.

2^20 x 4 KB

Consider the following processes with the corresponding length of CPU burst time given in ms. What will be mean turnaround time and average waiting time if non-preemptive priority scheduling is used? Smaller number implies higher priority. Show the Gantt chart.

Process	Burst Time (in ms)	Arrival time	Priority
A	10	0	4
B	3	0	1
C	8	3	2
D	16	4	3
E	2	7	5

since it is non preemtive so once a process runs it will run till completion
gantt chart ->
B C D A E
0 3 11 27 37 39
tat = completion time - arrival time
so tat for all the process are -> [37 3 8 23 32]
and watiting time = tat - burst time
so wt for all -> [27 0 0 7 30]
so average tat and wt = 20.6ms 32ms respectively

please note that the notation [a b c d e] represents the time for A B C D E respectively