

1. What elements are typically found in a page table entry? Briefly define each element.
2. Assuming a page size of 4 Kbytes 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 table fits into a single page?
3. Briefly define shortest-process-next scheduling.
4. Define residence time  $T_r$  as the average total time a process spends waiting and being served. Show that for FIFO, with mean service time  $T_s$ , we have  $T_r = T_s / (1 - \rho)$ , where  $\rho$  is utilization.