1. Explain the difference between internal and external fragmentation.

2. Allocation Techniques:
   a) How does each of the following approaches ensure protection:
      - Fixed Partitions
      - Variable Paritions
      - Pages
   
   b) What do each of the following approaches do when a context switch occurs?
      - Fixed Partitions
      - Variable Paritions
      - Pages

3. What is the difference between segmentation and paging? What are the advantages of paging? What are the advantages of segmentation?

4. Suppose you are using a paging system with 32-bit addressing and 2KB pages.
   a) How many bits are used for the offset?
   b) How many bits are used for the virtual page number?
   c) How many virtual pages can be addressed?
   d) How much memory will be needed to store each page table?
   e) How much memory would be needed for the page table if we had 16KB pages instead of 2KB pages?
   f) What is one reason why 2KB pages may be preferred over 16KB pages.