**MCQs**

1. Because of virtual memory, the memory can be shared among \_\_\_\_\_\_\_\_\_\_\_\_  
   a) processes  
   b) threads  
   c) instructions  
   d) none of the mentioned
2. \_\_\_\_\_ is the concept in which a process is copied into the main memory from the secondary memory according to the requirement.  
   a) Paging  
   b) Demand paging  
   c) Segmentation  
   d) Swapping
3. A computer has 16 GB of physical RAM and uses a paging system with a page size of 4 KB. How many pages are there in the physical memory?  
   a) 2^22 pages  
   b) 2^20 pages  
   c) 2^24 pages  
   d) 2^18 pages
4. In a virtual memory system, if the address space is 32 bits and the page size is 4 KB, what is the maximum number of pages that can be addressed?  
   a) 2^22 pages  
   b) 2^12 pages  
   c) 2^20 pages  
   d) 2^32 pages
5. Concepts that automatically move programs and data-blocks into physical main memory when they are required to execution are called?  
   a) Main memory concepts  
   b) Virtual memory concepts  
   c) Cache memory concepts  
   d) Associate memory concepts
6. Separation of user logical memory and physical memory is \_\_\_\_\_\_\_\_\_\_\_  
   a) Memory control  
   b) Memory management  
   c) Memory sharing  
   d) Virtual memory
7. If a virtual address consists of 32 bits and the page size is 4 KB, how many bits are needed for the page number in the virtual address?  
   a) 20 bits  
   b) 16 bits  
   c) 12 bits  
   d) 8 bits
8. A page table entry in a virtual memory system contains 20 bits. If the system uses a 4 KB page size, how many bytes can be addressed in a page table entry?

a) 1 MB  
b) 2 MB  
c) 8 MB  
d) 4 MB

1. A computer has 2 GB of physical RAM and uses a page size of 8 KB. If a process requires 256 MB of contiguous memory, how many pages must be allocated to the process?  
   a) 128 pages  
   b) 32 pages  
   c) 64 pages  
   d) 256 pages
2. When a program tries to access a page that is mapped in address space but loaded in physical memory, then \_\_\_\_\_\_\_\_\_\_\_\_?  
   a) fatal error occurs  
   b) page fault occurs  
   c) no error occurs  
   d) segmentation fault occurs
3. Swap space exists in \_\_\_\_\_\_\_\_\_\_\_?  
   a) Physical memory  
   b) Secondary memory  
   c) CPU  
   d) None of the above
4. Virtual memory allows \_\_\_\_\_\_\_\_\_\_?  
   a) execution of a process that may not be completely in memory  
   b) a program to be smaller than the physical memory  
   c) a program to be larger than the secondary storage  
   d) execution of a process without being in physical memory
5. Virtual memory is normally implemented by \_\_\_\_\_\_\_\_\_\_\_\_?  
   a) Buses  
   b) Virtualization  
   c) Demand paging  
   d) All of the above
6. Users are \_\_\_\_\_\_\_\_\_\_\_\_ that their processes are running on a paged system.  
   a) aware  
   b) unaware  
   c) may aware  
   d) None of the above
7. Thrashing \_\_\_\_\_\_\_\_\_\_\_\_ the CPU utilization.  
   a) decreases  
   b) increases  
   c) keeps constant  
   d) None of the above