* **MCQ-Chapter 2(Process Management and Synchronization)**

1. The systems which allow only one process execution at a time, are called \_\_\_\_\_\_\_\_\_\_  
a) uniprogramming systems  
b) uniprocessing systems  
c) unitasking systems  
d) none of the mentioned

Answer: b

2.In operating system, each process has its own \_\_\_\_\_\_\_\_\_\_  
a) address space and global variables  
b) open files  
c) pending alarms, signals and signal handlers  
d) all of the mentioned

Answer: d

3. In Unix, Which system call creates the new process?  
a) fork  
b) create  
c) new  
d) none of the mentioned

Answer: a

4. A process can be terminated due to \_\_\_\_\_\_\_\_\_\_  
a) normal exit  
b) fatal error  
c) killed by another process  
d) all of the mentioned

Answer: d

5. What is the ready state of a process?  
a) when process is scheduled to run after some execution  
b) when process is unable to run until some task has been completed  
c) when process is using the CPU  
d) none of the mentioned

Answer: a

6. What is interprocess communication?  
a) communication within the process  
b) communication between two process  
c) communication between two threads of same process  
d) none of the mentioned

Answer: b

7. A set of processes is deadlock if \_\_\_\_\_\_\_\_\_\_  
a) each process is blocked and will remain so forever  
b) each process is terminated  
c) all processes are trying to kill each other  
d) none of the mentioned

Answer: a

8. A process stack does not contain \_\_\_\_\_\_\_\_\_\_  
a) Function parameters  
b) Local variables

c) Return addresses  
d) PID of child process

Answer: d

9. Which system call can be used by a parent process to determine the termination of child process?  
a) wait  
b) exit  
c) fork  
d) get

Answer: a

10. The address of the next instruction to be executed by the current process is provided by the \_\_\_\_\_\_\_\_\_\_  
a) CPU registers  
b) Program counter  
c) Process stack  
d) Pipe

Answer: b

* **Process Synchronization**

1. Which process can be affected by other processes executing in the system?  
   a) cooperating process  
   b) child process  
   c) parent process  
   d) init process
2. Answer: a

2. When several processes access the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place is called \_\_\_\_\_\_\_\_  
a) dynamic condition  
b) race condition  
c) essential condition  
d) critical condition

Answer: b

3. If a process is executing in its critical section, then no other processes can be executing in their critical section. What is this condition called?  
a) mutual exclusion  
b) critical exclusion  
c) synchronous exclusion  
d) asynchronous exclusion

Answer: a

4. Which one of the following is a synchronization tool?  
a) thread  
b) pipe  
c) semaphore  
d) socket

Answer: c

5. A semaphore is a shared integer variable \_\_\_\_\_\_\_\_\_\_  
a) that can not drop below zero  
b) that can not be more than zero  
c) that can not drop below one  
d) that can not be more than one

Answer: a

6. Mutual exclusion can be provided by the \_\_\_\_\_\_\_\_\_\_  
a) mutex locks  
b) binary semaphores  
c) both mutex locks and binary semaphores  
d) none of the mentioned

Answer: c

7. When high priority task is indirectly preempted by medium priority task effectively inverting the relative priority of the two tasks, the scenario is called \_\_\_\_\_\_\_\_\_\_  
a) priority inversion  
b) priority removal  
c) priority exchange  
d) priority modification

Answer: a

8. Process synchronization can be done on \_\_\_\_\_\_\_\_\_\_  
a) hardware level  
b) software level  
c) both hardware and software level  
d) none of the mentioned

Answer: c

9. A monitor is a module that encapsulates \_\_\_\_\_\_\_\_\_\_  
a) shared data structures  
b) procedures that operate on shared data structure  
c) synchronization between concurrent procedure invocation  
d) all of the mentioned

Answer: d

10. To enable a process to wait within the monitor \_\_\_\_\_\_\_\_\_\_  
a) a condition variable must be declared as condition  
b) condition variables must be used as boolean objects  
c) semaphore must be used  
d) all of the mentioned

Answer: a

# CPU Scheduling

1. Which module gives control of the CPU to the process selected by the short-term scheduler?  
   a) dispatcher  
   b) interrupt  
   c) scheduler  
   d) none of the mentioned

Answer: a

1. The processes that are residing in main memory and are ready and waiting to execute are kept on a list called \_\_\_\_\_\_\_\_\_\_\_\_\_  
   a) job queue  
   b) ready queue  
   c) execution queue  
   d) process queue

Answer: b

1. The interval from the time of submission of a process to the time of completion is termed as \_\_\_\_\_\_\_\_\_\_\_\_  
   a) waiting time  
   b) turnaround time  
   c) response time  
   d) throughput

Answer: b

1. Which scheduling algorithm allocates the CPU first to the process that requests the CPU first?  
   a) first-come, first-served scheduling  
   b) shortest job scheduling  
   c) priority scheduling  
   d) none of the mentioned

Answer: a

1. In priority scheduling algorithm \_\_\_\_\_\_\_\_\_\_\_\_  
   a) CPU is allocated to the process with highest priority  
   b) CPU is allocated to the process with lowest priority  
   c) Equal priority processes can not be scheduled  
   d) None of the mentioned

Answer: a

1. In priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of \_\_\_\_\_\_\_\_\_\_\_\_  
   a) all process  
   b) currently running process  
   c) parent process  
   d) init process

Answer: b

1. Which algorithm is defined in Time quantum?  
   a) shortest job scheduling algorithm  
   b) round robin scheduling algorithm  
   c) priority scheduling algorithm  
   d) multilevel queue scheduling algorithm

Answer: b

1. Process are classified into different groups in \_\_\_\_\_\_\_\_\_\_\_\_  
   a) shortest job scheduling algorithm  
   b) round robin scheduling algorithm  
   c) priority scheduling algorithm  
   d) multilevel queue scheduling algorithm

Answer: d

1. In multilevel feedback scheduling algorithm \_\_\_\_\_\_\_\_\_\_\_\_  
   a) a process can move to a different classified ready queue  
   b) classification of ready queue is permanent  
   c) processes are not classified into groups  
   d) none of the mentioned

Answer: a

1. Which one of the following can not be scheduled by the kernel?  
   a) kernel level thread  
   b) user level thread  
   c) process  
   d) none of the mentioned

Answer: b

# Deadlock

1. What is a reusable resource?  
   a) that can be used by one process at a time and is not depleted by that use  
   b) that can be used by more than one process at a time  
   c) that can be shared between various threads  
   d) none of the mentioned

Answer: a

1. Which of the following condition is required for a deadlock to be possible?  
   a) mutual exclusion  
   b) a process may hold allocated resources while awaiting assignment of other resources  
   c) no resource can be forcibly removed from a process holding it  
   d) all of the mentioned

Answer: d

1. A system is in the safe state if \_\_\_\_\_\_\_\_\_\_\_\_  
   a) the system can allocate resources to each process in some order and still avoid a deadlock  
   b) there exist a safe sequence  
   c) all of the mentioned  
   d) none of the mentioned

Answer: a

1. The circular wait condition can be prevented by \_\_\_\_\_\_\_\_\_\_\_\_  
   a) defining a linear ordering of resource types  
   b) using thread  
   c) using pipes  
   d) all of the mentioned

Answer: a

1. Which one of the following is the deadlock avoidance algorithm?  
   a) banker’s algorithm  
   b) round-robin algorithm  
   c) elevator algorithm  
   d) karn’s algorithm

Answer: a

1. What is the drawback of banker’s algorithm?  
   a) in advance processes rarely know how much resource they will need  
   b) the number of processes changes as time progresses  
   c) resource once available can disappear  
   d) all of the mentioned

Answer: d

1. For an effective operating system, when to check for deadlock?  
   a) every time a resource request is made  
   b) at fixed time intervals  
   c) every time a resource request is made at fixed time intervals  
   d) none of the mentioned

Answer: c

1. A problem encountered in multitasking when a process is perpetually denied necessary resources is called \_\_\_\_\_\_\_\_\_\_\_\_  
   a) deadlock  
   b) starvation  
   c) inversion  
   d) aging

Answer: b

1. Which one of the following is a visual ( mathematical ) way to determine the deadlock occurrence?  
   a) resource allocation graph  
   b) starvation graph  
   c) inversion graph  
   d) none of the mentioned

Answer: a

1. To avoid deadlock \_\_\_\_\_\_\_\_\_\_\_\_  
   a) there must be a fixed number of resources to allocate  
   b) resource allocation must be done only once  
   c) all deadlocked processes must be aborted  
   d) inversion technique can be used

Answer: a

# Memory Management

1. CPU fetches the instruction from memory according to the value of \_\_\_\_\_\_\_\_\_\_\_\_  
   a) program counter  
   b) status register  
   c) instruction register  
   d) program status word

Answer: a

1. A memory buffer used to accommodate a speed differential is called \_\_\_\_\_\_\_\_\_\_\_\_  
   a) stack pointer  
   b) cache  
   c) accumulator  
   d) disk buffer

Answer: b

1. Which one of the following is the address generated by CPU?  
   a) physical address  
   b) absolute address  
   c) logical address  
   d) none of the mentioned

Answer: c

1. Run time mapping from virtual to physical address is done by \_\_\_\_\_\_\_\_\_\_\_\_  
   a) Memory management unit  
   b) CPU  
   c) PCI  
   d) None of the mentioned

Answer: a

1. Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called?  
   a) fragmentation  
   b) paging  
   c) mapping  
   d) none of the mentioned

Answer: b

1. The address of a page table in memory is pointed by \_\_\_\_\_\_\_\_\_\_\_\_  
   a) stack pointer  
   b) page table base register  
   c) page register  
   d) program counter

Answer: b

1. Program always deals with \_\_\_\_\_\_\_\_\_\_\_\_  
   a) logical address  
   b) absolute address  
   c) physical address  
   d) relative address

Answer: a

1. The page table contains \_\_\_\_\_\_\_\_\_\_\_\_  
   a) base address of each page in physical memory  
   b) page offset  
   c) page size  
   d) none of the mentioned

Answer: a

1. What is compaction?  
   a) a technique for overcoming internal fragmentation  
   b) a paging technique  
   c) a technique for overcoming external fragmentation  
   d) a technique for overcoming fatal error

Answer: c

1. Operating System maintains the page table for \_\_\_\_\_\_\_\_\_\_\_\_  
   a) each process  
   b) each thread  
   c) each instruction  
   d) each address

Answer: a

# Paging

1. Physical memory is broken into fixed-sized blocks called \_\_\_\_\_\_\_\_  
   a) frames  
   b) pages  
   c) backing store  
   d) none of the mentioned

Answer: a

1. Logical memory is broken into blocks of the same size called \_\_\_\_\_\_\_\_\_  
   a) frames  
   b) pages  
   c) backing store  
   d) none of the mentioned

Answer: b

1. Every address generated by the CPU is divided into two parts. They are \_\_\_\_\_\_\_\_\_\_\_\_  
   a) frame bit & page number  
   b) page number & page offset  
   c) page offset & frame bit  
   d) frame offset & page offset

Answer: b.

1. The \_\_\_\_\_\_\_\_\_\_ is used as an index into the page table.  
   a) frame bit  
   b) page number  
   c) page offset  
   d) frame offset

Answer: b

1. The \_\_\_\_\_ table contains the base address of each page in physical memory.  
   a) process  
   b) memory  
   c) page  
   d) frame

Answer: c

1. The size of a page is typically \_\_\_\_\_\_\_\_\_\_\_\_  
   a) varied  
   b) power of 2  
   c) power of 4  
   d) none of the mentioned

Answer: b

1. With paging there is no \_\_\_\_\_\_\_\_ fragmentation.  
   a) internal  
   b) external  
   c) either type of  
   d) none of the mentioned

Answer: b

1. The operating system maintains a \_\_\_\_\_\_ table that keeps track of how many frames have been allocated, how many are there, and how many are available.  
   a) page  
   b) mapping  
   c) frame  
   d) memory

Answer: c

1. Paging increases the \_\_\_\_\_\_ time.  
   a) waiting  
   b) execution  
   c) context – switch  
   d) all of the mentioned

Answer: c

1. Smaller page tables are implemented as a set of \_\_\_\_\_\_\_  
   a) queues  
   b) stacks  
   c) counters  
   d) registers

Answer: d

1. The page table registers should be built with \_\_\_\_\_\_\_  
   a) very low speed logic  
   b) very high speed logic  
   c) a large memory space  
   d) none of the mentioned

Answer: b

1. For larger page tables, they are kept in main memory and a \_\_\_\_\_\_\_\_\_\_ points to the page table.  
   a) page table base register  
   b) page table base pointer  
   c) page table register pointer  
   d) page table base

Answer: a

1. For every process there is a \_\_\_\_\_\_\_\_\_\_  
   a) page table  
   b) copy of page table  
   c) pointer to page table  
   d) all of the mentioned

Answer: a

# File System

1. \_\_\_\_\_\_ is a unique tag, usually a number identifies the file within the file system.  
   a) File identifier  
   b) File name  
   c) File type  
   d) None of the mentioned

Answer: a

1. To create a file \_\_\_\_\_\_\_\_\_\_\_\_  
   a) allocate the space in file system  
   b) make an entry for new file in directory  
   c) allocate the space in file system & make an entry for new file in directory  
   d) none of the mentioned

Answer: c

1. By using the specific system call, we can \_\_\_\_\_\_\_\_\_\_\_\_  
   a) open the file  
   b) read the file  
   c) write into the file  
   d) all of the mentioned

Answer: d

1. File type can be represented by \_\_\_\_\_\_\_\_\_\_\_\_  
   a) file name  
   b) file extension  
   c) file identifier  
   d) none of the mentioned

Answer: b

1. Which file is a sequence of bytes organized into blocks understandable by the system’s linker?  
   a) object file  
   b) source file  
   c) executable file  
   d) text file

Answer: a

1. What is the mounting of file system?  
   a) crating of a filesystem  
   b) deleting a filesystem  
   c) attaching portion of the file system into a directory structure  
   d) removing the portion of the file system into a directory structure

Answer: c

1. Mapping of file is managed by \_\_\_\_\_\_\_\_\_\_\_\_  
   a) file metadata  
   b) page table  
   c) virtual memory  
   d) file system

Answer: a

1. Mapping of network file system protocol to local file system is done by \_\_\_\_\_\_\_\_\_\_\_\_  
   a) network file system  
   b) local file system  
   c) volume manager  
   d) remote mirror

Answer: a

1. Which one of the following explains the sequential file access method?  
   a) random access according to the given byte number  
   b) read bytes one at a time, in order  
   c) read/write sequentially by record  
   d) read/write randomly by record

Answer: b

1. When will file system fragmentation occur?  
   a) unused space or single file are not contiguous  
   b) used space is not contiguous  
   c) unused space is non-contiguous  
   d) multiple files are non-contiguous

Answer: a