Week 5a

1) A\_\_\_\_\_\_\_\_\_\_\_is a data type that is used to block a process or thread until particular condition is true.

a. mutex

b. general semaphore

c. deadlock

**d. condition variable**

2) It is possible for one process to lock the mutex and for another process to unlock it.

**False**

3) A process that is waiting for access to a critical section does not consume processor time.

**False**

4) A semaphore whose definition includes the policy that the process that has been blocked the longest is released from the queue first is called a \_\_\_\_\_\_\_\_\_ semaphore.

**a. strong**

b. general

c. counting

d. Weak

5) When processes cooperate by communication, the various processes participate in a common effort that links all of the processes.

**True**

6) The sharing of main memory among processes is useful to permit efficient and close interaction among processes because such sharing does not lead to any problems.

**False**

7) A \_\_\_\_\_\_\_\_ relationship allows multiple server processes to provide concurrent service to multiple clients.

a. one-to-many

b. many-to-one

**c. many-to-many**

d. One-to-one

8) A \_\_\_\_\_\_\_\_ occurs when multiple processes or threads read and write data items so that the final result depends on the order of execution of instructions in the multiple processes.

**a. race condition**

b. atomic operation

c. livelock

d. Deadlock

9) The requirement that when one process is in a critical section that accesses shared resources, no other process may be in a critical section that accesses any of those shared resources is \_\_\_\_\_\_\_\_ .

**a. mutual exclusion**

b. livelock

c. critical section

d. atomic operation

10) A situation in which a runnable process is overlooked indefinitely by the scheduler, although it is able to proceed, is \_\_\_\_\_\_\_\_\_ .

a. livelock

**b. starvation**

c. mutual exclusion

d. Deadlock

11) Two or more processes can cooperate by means of simple signals, such that a process can be forced to stop at a specified place until it has received a specific signal.

**True**

12) Processes need to be synchronised to enforce mutual exclusion.

**True**

13) Concurrent processes do not come into conflict with each other when they are competing for the use of the same resource.

**False**

14) Race condition is a situation in which two or more processes continuously change their states in response to changes in the other process(es) without doing any useful.

**False**

15) It is possible in a single-processor system to not only interleave the execution of multiple processes but also to overlap them.

**False**

16) A semaphore that does not specify the order in which processes are removed from the queue is a \_\_\_\_\_\_\_\_ semaphore.

a. general

b. strong

**c. weak**

d. Binary

17) The management of multiple processes within a uniprocessor system is \_\_\_\_\_\_\_\_\_\_ .

**a. multiprogramming**

b. multiprocessing

c. distributed processing

d. structured applications

18) The case of cooperation by sharing covers processes that interact with other processes without being explicitly aware of them.

**True**

19) As an extension of the principles of modular design and structured programming, some applications can be effectively programmed as a set of concurrent processes.

**True**

20) The central themes of operating system design are all concerned with the management of processes and threads.

**True**