Multiple Choice Questions

6.1 Suppose a shared printer is printing my_job currently. While the printer is in use, you seek to print your_job. Under any of the modern OSs which of the following events (one or more) are likely to happen :

   a. you will be notified that the printer is busy, print later

   b. my_job will be aborted because you are my boss

   c. your_job will be spooled for printing in the order it arrived

   d. your_job will be queued based on its priority

   e. your_job will be taken up immediately if it has higher priority over my_job

6.2 From the statements identify the conditions under which a deadlock happens:

   a. Mutual exclusion

   b. A device crash

   c. Hold and wait

   d. Preemption

   e. No preemption

   f. Round-robin scheduling

   g. Cyclic procedure calls

   h. Circular wait

6.3 We can always prevent a deadlock from happening by providing for additional resources of the same kind

   a. True

   b. False

6.4 Which of the following statements (one or more) are true in the context of Banker's algorithm:

   a. It detects deadlock

   b. It prevents deadlock

   c. It detects deadlock but can not prevent deadlock from happening

   d. It requires prior knowledge of the requirements of all the currently executing processes.

   e. Bankers' algorithm caters to dynamic needs of executing processes

f. It is known as Bankers' algorithm because it was invented by an English man who was a Banker.

6.5 Which of the following (one or more) statements are true.

a. Semaphore is used when we wish to execute critical section.

b. A binary semaphore can take only two values.

c. Semaphores have the properties of an integer variable.

d. Operations on semaphore are atomic in nature.

6.6 A critical section is the code which seeks service from a resource which can cater to one user at any one time

a. True

b. False

6.7 Which of the following statements are true?

a. Suppose we have 3 copies of a mutually exclusive resource. A semaphore which can take 4 distinct values would suffice to ensure safe operation.

b. A semaphore can be utilized to lock a database table entry (row and column).

c. A wait operation adds 1 to the semaphore value at every clock cycle.

d. A signal operation subtracts 1 to the semaphore value at every clock cycle.

e. A semaphore value remains unaltered regardless of which of the two, wait or signal operations, is performed.

6.8 Semaphores can not be utilized for synchronizing with events as the events are essentially detected by interrupts

a. True

b. False

6.9 Semaphores work for:

a. Single Threaded Processes only.

b. Multi Threaded Processes only.

c. Both (a) and (b).

d. None of the above (a to c).

10. There are multiple resources in a system, each having a semaphore. The processes require more than one resource for their execution. They test on the semaphore

before taking the resource. Which of the following problems illustrates the presence of a deadlock in the above situation?

    a. Bounded Buffer Problem.

    b. Dining Philosopher's problem.

    c. Both of the above.

    d. None of the above.

    e. Deadlock cannot occur in the above situation.