Ceng 328 - Quiz 2

Solve all questions.

For Thursday section

1. (1.75 pts) A deadlocked state occurs whenever _____

   A) a process is waiting for I/O to a device that does not exist

   B) the system has no available free resources

   C) every process in a set is waiting for an event that can only be caused by another process in the set

   D) a process is unable to release its request for a resource after use

2. (1.75 pts) One necessary condition for deadlock is _____, which states that at least one resource must be held in a nonsharable mode.

   A) hold and wait

   B) mutual exclusion

   C) circular wait

   D) no preemption

3. (1.75 pts) One necessary condition for deadlock is , which states that a process must be holding one resource and waiting to acquire additional resources.

   A) hold and wait

   B) mutual exclusion

   C) circular wait

   D) no preemption

4. (1.75 pts) In a system resource-allocation graph, _____.

   A) a directed edge from a process to a resource is called an assignment edge

   B) a directed edge from a resource to a process is called a request edge

   C) a directed edge from a process to a resource is called a request edge

   D) None of the above

Choose only one question.

5. (8 pts) What are the three general ways that a deadlock can be handled?

6. (8 pts) What is the difference between deadlock prevention and deadlock avoidance?

For Friday section

1. (1.75 pts) A deadlocked state occurs whenever _____

   A) a process is waiting for I/O to a device that does not exist

   B) the system has no available free resources

   C) every process in a set is waiting for an event that can only be caused by another process in the set

   D) a process is unable to release its request for a resource after use

2. (1.75 pts) One necessary condition for deadlock is _____, which states that a resource can be released only voluntarily by the process holding the resource. One necessary condition for deadlock is , which states that at least one resource must be held in a nonsharable mode.

   A) hold and wait

   B) mutual exclusion

   C) circular wait

   D) no preemption

3. (1.75 pts) One necessary condition for deadlock is _____, which states that there is a chain of waiting processes whereby P_0 is waiting for a resource held by P_1, P_1 is waiting for a resource held by P_2, and P_n is waiting for a resource held by P_0.

   A) hold and wait

   B) mutual exclusion

   C) circular wait

   D) no preemption

4. (1.75 pts) To handle deadlocks, operating systems most often _____

   A) pretend that deadlocks never occur

B) use protocols to prevent or avoid deadlocks

C) detect and recover from deadlocks

D) None of the above

Choose only one question.

5. (8 pts) Describe a wait-for graph and how it detects deadlock.

6. (8 pts) What factors influence the decision of when to invoke a detection algorithm?