5.2:

A kernel need not perform scheduling after handling an interrupt if the interrupt did not cause a change in state for any process, e.g., if a process makes a request through a system call and the kernel can satisfy the request straightaway.

5.3:

(a) The process would have reached the blocked swapped state through a sequence of state transitions that ended with the transitions: ready -> blocked -> blocked swapped.

(b) The process would reach the ready state through a sequence of state transitions that begins either with the state transitions blocked swapped -> blocked -> ready, or with the state transitions blocked swapped -> ready swapped -> ready.

5.6:

Use of a single swapped state cannot support swapping of both ready and blocked processes because knowledge of the previous state of the process would be needed to decide which state the process should enter when it is swapped-in. This difficulty can be overcome by swapping only ready processes. In this case, a process cannot be swapped out until its I/O operation completes. This restriction limits the effectiveness of swapping. Besides, it is also fine to swap only blocked processes. However, each strategy can limit the effectiveness of swapping.

5.11:

This statement is incorrect. Concurrency provides speedup of an application because the I/O activity of one process in the application can overlap with the CPU activity of another process in the application.
5.15:

The time consumed by the CPU and I/O activities in the three processes is as follows:

<table>
<thead>
<tr>
<th>Process</th>
<th>CPU time</th>
<th>I/O time</th>
<th>Elapsed time</th>
</tr>
</thead>
<tbody>
<tr>
<td>copy sample</td>
<td>0.005 msec</td>
<td>nil</td>
<td>0.005 msec</td>
</tr>
<tr>
<td>record sample</td>
<td>0.001 msec</td>
<td>1.5 msec</td>
<td>1.501 msec</td>
</tr>
<tr>
<td>housekeeping</td>
<td>0.200 msec</td>
<td>1.5 msec</td>
<td>1.700 msec</td>
</tr>
</tbody>
</table>

The total elapsed time would be 3.206 msec if a single process performs all the operations. When multiple processes are created, the best speed-up would be obtained when the I/O operations of record keeping and housekeeping overlap. The elapsed time in this case is 1.706 msec. The speed-up ratio is thus 3.206/1.706, which is about 1.88.