

## Assignment 2, Written

Part a:  $M$  = The system is in multiuser state.  
 $O$  = The system is operating normally.  
 $F$  = The kernel is functioning.  
 $I$  = The system is in interrupt mode.

Part b:

- $M \leftrightarrow O$  (S1)
- $O \rightarrow F$  (S2)
- $\neg F \vee I$  (S3)
- $\neg M \rightarrow I$  (S4)
- $\neg I$  (S5)

Part c: The system is not in interrupt mode (S5).

If the system is not in interrupt mode, the system must be in multiuser state (S4).

If the system is in multiuser state, then the system is operating normally (S1).

If the system is operating normally, then the kernel must be functioning (S2).

If the kernel is functioning, then the system must be in interrupt mode (S3).

However, according to S5, the system is not in interrupt mode.

The kernel is functioning, and the system is not in interrupt mode. This is a contradiction.

Therefore, the set of system specifications is inconsistent.