

ICS 431 - Quiz #1

2.5% of the total grade

Time: 15 minutes

Student ID: _____

Student Name: _____

1. Answer the following 2 questions which are related to DMA.

- a. Do we need a DMA for a key board? _____ [1 points]
- b. If your answer in *a* is YES, explain why, and if your answer is NO explain why not? [5 points]

2. The **Action** column of the following table shows the main actions that are performed when a user makes a system call. In the table, the actions are not sorted in the order they are performed during a system call. Write the order number of each action in the **Step** column of the following table.

[9 points]

| Action | Step |
|---|-------------|
| execute system call (using privileged instructions) | |
| branch to case statement in system code | |
| return to user process | |
| branch to code for system routine based on system call number | |
| hardware resets mode-bit | |
| system saves state of user process | |
| hardware sets mode-bit to 1 | |
| restore state of user program | |
| copy parameters from user stack | |