CSCE 235 **Sep 11, 00**

Quiz #2

Do **all** of the following questions and show your work.

Question 1: (7 points) Let $A = \{b, c, d, e\}$. Give an example of a binary relation on A, which is both a partial order and an equivalence relation. If such binary relation does not exist, then say so.

Question 2: (7 points) Consider the poset $(A, \subseteq)$, where $A = \{\{1\}, \{2\}, \{1, 3\}, \{1, 3, 4\}\}$.

(a) Find all maximum elements.

(b) Find all maximal elements.

(c) Find all minimum elements.

(d) Find all minimal elements.

Question 3: (6 points) Define the following equivalence relation on $\mathbb{R}$:

For every a, b in $\mathbb{R}$,

$$a \sim b \text{ iff } a = b + 7k, \text{ for some } k \in \mathbb{Z}.$$

Find the equivalence class of 1.