

**Quiz FOUR MTH 213 , Fall 2011**

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**QUESTION 1.** Let  $A = \{a, b\}$  and let  $B = P(A)$ . Let  $T$  be a binary relation on  $B$  such that  $xTy \Leftrightarrow x \subseteq y$ , where  $x, y \in B$ . Write down the elements of  $B$ . Then state whether  $T$  is reflexive, transitive, symmetric.

**QUESTION 2.** Let  $A = \{1, 2, 3, 4, 5\}$ . Give me an equivalence relation say  $T$  on  $A$  such that  $A$  under  $T$  has exactly three distinct equivalent classes.

**QUESTION 3.** Let  $Z_5 = \{0, 1, 2, 3, 4\}$ . Construct the addition (module 5) table for  $Z_5$  and the multiplication (module 5) table.

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