CS 3333 Mathematical Foundations Spring '11

Recitation 10 Practiced on: 3/9 5:30 - 6:20 pm

5.5 Generalized Permutations and Combinations

Note: These problems are designed for practice during a 50 minute recitation.

a) **Easy** problems: expected to be solved in *5 min*.
b) **Medium** problems: expected to be solved in *30 min*.
c) **Hard** problems: expected to be solved in *15 min*.

During the recitation, you may discuss the problems with your peers and the TA. Please control your volume and don't annoy others. An electronic copy of these problems and solutions will be posted on the following URL: http://cs.utsa.edu/~btang/pages/teaching.html.

Questions:

1. (Easy, 2 min) In how many different ways can five elements be selected in order from a set with three elements when repetition is allowed? (Textbook [KR] Page 379: 1)
2. (Easy, 3 min) How many ways are there to assign three jobs to five employees if each employee can be given more than one job? (Textbook [KR] Page 379: 5)
3. (Medium, 10min) How many ways are there to select three unordered elements from a set with five elements when repetition is allowed? (Textbook [KR] Page 379: 7)
4. (Medium, 10 min) How many ways are there to choose eight coins from a piggy bank containing 100 identical pennies and 80 identical nickels? (Textbook [KR] Page 380: 11)
5. (Medium, 10min) How many strings of 10 ternary digits (0, 1, or 2) are there that contain exactly two 0s, three 1s, and five 2s? (Textbook [KR] Page 380: 17)
6. (Hard, 15 min) How many different strings can be made from the letters in ABRACADABRA, using all the letters? (Textbook [KR] Page 380: 31)

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