CS311 – Computational Structures – HW6

Tuesday, May 10, 2011
due in class Tuesday, May 17, 2011

Answer each question below. Write your answers neatly on paper. Be sure your name is on the paper, and the paper is clearly identified as Homework 6.

1. Problem 1, Section 12.2, page 777. Parts a and d. Find a PDA. Include a pictorial drawing of each PDA. Be sure and label all the states and transitions. (10 points each)

2. Problem 2, Section 12.2, page 777. Find a single state PDA. Represent your PDA by a transition table. Also, give a sequence of instantaneous descriptions (triples, see page 764) that describes the recongnition of the string "aabbb" (Table 15 points, sequence 5 points).

3. Problem 7, Section 12.2, page 778. Part b. CFG to PDA. Represent your PDA by a transition table. Show the steps you used in a manner similar to the example given on page 770-771. (Steps 12 points, PDA 8 points)

4. Problem 8, Section 12.2, page 778. PDA to CFG. Show the steps you used in a manner similar to the example given on page 772-773. (Steps 12 points, PDA 8 points)

5. Problem 2, Section 12.4, page 808. Part b. Chomsky-Normal-Form. Show the steps you used in a manner similar to the example given on page 800-801. (Steps 12 points, PDA 8 points)