

Concordia University
Faculty of Engineering and Computer Science
Applied Ordinary Differential Equations
ENGR 213, Sec. G
S. Hashtrudi Zad

Term Test 2
3 Questions, 4 pages
22 March 2010

Family name:

Given name:

Student ID:

Time allotted: 60 minutes.

Instructions:

- The exam is closed-book.
- No crib sheet is permitted.
- Only faculty-approved calculators with stickers are permitted.
- Answer each question within the space provided under the question.

1.

2.

3.

1. (35%) Find the solution of the following initial-value problem using the method of *undetermined coefficients*.

$$2y'' - 5y' + 2y = 3 \sin x \quad y(0) = 1, \quad y'(0) = 0$$

2. (30%) Find the general solution of the following differential equation.

$$y'' - 4y' + 29y = 0$$

3. (35%) Solve the following differential equation using the method of *variation of parameters*.

$$x^2y'' - 3xy' + 4y = x \quad (x > 0)$$
