

## Assignment 8

### Advanced Mathematical Techniques in Chemical Engineering (CH 61015)

Full Marks: 30

Solve the following ODEs using Green's function method

1.

$$\frac{d^2u}{dx^2} = 3x$$

At  $x=0$ ,  $u=2$ , at  $x=1$ ,  $u=3$ .

2. Solve the above equation subject to, at  $x=0$ ,  $u=1$ , at  $x=1$ ,  $\frac{du}{dx} = 3$

3. Solve the  $\frac{d^2u}{dx^2} = 3x$  equation subject to, at  $x=0$ ,  $u + \frac{du}{dx} = 3$  at  $x=1$ ,  $\frac{du}{dx} + u = 2$

