**KFUPM, DEPARTMENT OF MATHEMATICS AND STATISTICS**

MATH 202 : TEST 5, T 162, 2017

Name : ..... ..... .....

ID : .....

**Exercise 1.** Find two linearly independent power series solutions of the DE :

$$y'' + xy' + 2y = 0.$$

**Exercise 2.** Find a fundamental set of Frobenius solutions of the DE :

$$2x^2y'' + 5xy' + (1 + x)y = 0.$$

**Exercise 3.** Find the indicial roots of the DE :

$$4x^2y'' + (1 + 4x)y = 0.$$

Find the recurrence relation between the coefficients of the solution provided by Frobenius method.