



Kingdom of Saudi Arabia
King Abdulaziz University

Faculty of Science – Mathematics Department
Second Mid-Term Exam (90 Minutes) - (204 Math).
1/2/1435 H – 4/12/2013 A.D. First Semester
1434-1435 H

Model A

Name:	Section:
Student's I.N. :	Serial Number:

Q_1	Q_2	Q_3	Q_4	Q_5	Total Marks (30)

(Answer the following questions)

1 Show that the IVP:

[3 Marks]

$(x - 1)^2 y'' + xy' + y = 5x - 7, y(1) = 1, y'(1) = 2$ has a unique solution.

2 Determine the form of a particular solution of

[4 Marks]

$$y'' + 9y = (x^2 + 1) \cos 3x$$

3 Solve

$$3y'' - 6y' + 6y = e^x \sec x$$

[7 Marks]

4 Solve

$$(D + 2)x - 4y = -4t - 2,$$

[8 Marks]

$$-2x + Dy = 4t$$

5 Solve $x^2 y'' + xy' - y = \frac{1}{x+1}$

[8 Marks]