



*Kingdom of Saudi Arabia*  
*King Abdulaziz University*

**Faculty of Science – Mathematics Department**  
**Second Mid-Term Exam (90 Minutes) - (Math 204).**

**11/6/1434 H – 21/4/2013 A.D.**

**Second Semester**

**1433-1434 H**

**Model B**

<b>Name:</b>	<b>Section:</b>
<b>Student's I.N. :</b>	<b>Serial Number:</b>

$Q_1$	$Q_2$	$Q_3$	$Q_4$	$Q_5$	Total Marks (25)

(Answer the following questions)

1 Show that the set of the functions  $1, e^x, \cos x$  is linear independent. [3 Marks]

2 Prove that the IVP: [3 Marks]

$x^2 y'' + xy' - y = 3, y(2) = 1, y'(1) = 2$  has a unique solution.

3 Solve  $y'' + y = \sec x$

[6 Marks]

4 Solve

$$Dx + y = t$$

[7 Marks]

$$x - Dy = t$$

5 Solve  $x^2 y'' - xy' + y = \ln x$

[6 Marks]