Kingdom of Saudi Arabia
King Abdulaziz University

Faculty of Science –Mathematics Department
Second Mid-Term Exam (90 Minutes) - (204 Math).
2/6/1433 H – 23/4/2012 A.D. Second Semester
1432-1433 H

Model A

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

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

(Answer the following questions)

1 A 12 – volt electromotive force is applied to an *LR* series circuit in which the inductance is 0.5 henry and the resistance is 10 ohms. Find the current $i(t)$ if $i(0) = 0$. Determine the current as $t \to \infty$. **[5 Marks]**

2 Determine the form of a particular solution of **[5 Marks]**

$$y'' - 2y' + y = e^x$$

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

4 Solve $y'' + y = \cot x$ **[6 Marks]**

5 Solve $x^2y'' - xy' + 4y = \cos \ln x$ **[6 Marks]**