Form No. T631

Philadelphia University **Student Name:**
Faculty of Engineering **Student Number:**

Dept. of Communications & Electronics
Third Exam, Summer Semester: 2004/2005

Course Title: Engineering Analysis I	**Date: 31/07/2005**
Course No: (630201)	**Time Allowed: 1 Hours**
Lecturer: Dr. Abdel-Rahman Al-Qawasmi	**No. of Pages: 1**

Question 1: ***(5 Marks)***

Objective: About Unseparable Differential Equations

Solve the following differential equation.

$$y'x = x\cot(\frac{y}{x}) + y$$

Question 2: ***(4 Marks)***

Objective: About Exact Differential equations

Check the Exactness and find the general solution.

$$y^2dx + 2yxdy = 0$$

Question 3: ***(6 Mark)***

Objective: Second Order differential equations

Solve the following boundary value problem

$$(D^2 + 2D + \frac{29}{4})y = 0, \qquad y(0) = 1, y(\frac{\pi}{5}) = e^{-\pi/5}$$

Question 4: ***(5 Mark)***

Objective: Verification of solutions

Verify that $y = e^{-x^2}(x + c)$ is a solution of the differential equation:

$$y' + 2xy = e^{-x^2}$$