Philadelphia University
Faculty of Engineering
Dept. of Mechatronics Engineering

Homework ,
Second Semester
2014/2015

Course Title: Digital Control	**Date: 11/05/2014**
Course No: 0640441	**Time Allowed: 50 minutes**
Lecturer: Dr. Mustafa Awwad Al-Khawaldeh	**No. of Pages: 3**

(10 marks)

a. Draw the block diagram representation for the following difference equations.   **(6 marks)**

   i. $y[n] = x[n] + 2x[n-1] - 3y[n-1]$ **(3 marks)**

   ii. $w[n] = w[n-1] + 2\,w[n-2] + x[n]$ **(3 marks)**

b. Solve the following difference equation by using a program written in MATLAB   **(4 marks)**

   $x(k+2) + 3x(k+1) + 2x(k) = 0 \quad , \; x(0) = 0 \; , \; x(1) = 1$