ODE Analysis Using

Simulink

Lab: 06

Fall 2022

CSE-3L Control Systems

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Class Section: **B**

"On my honor, as a student of the University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work."

Student Signature: _____

Submitted to:

Dr: Muniba Ashfaq

November 15, 2022

Department of Computer Systems Engineering

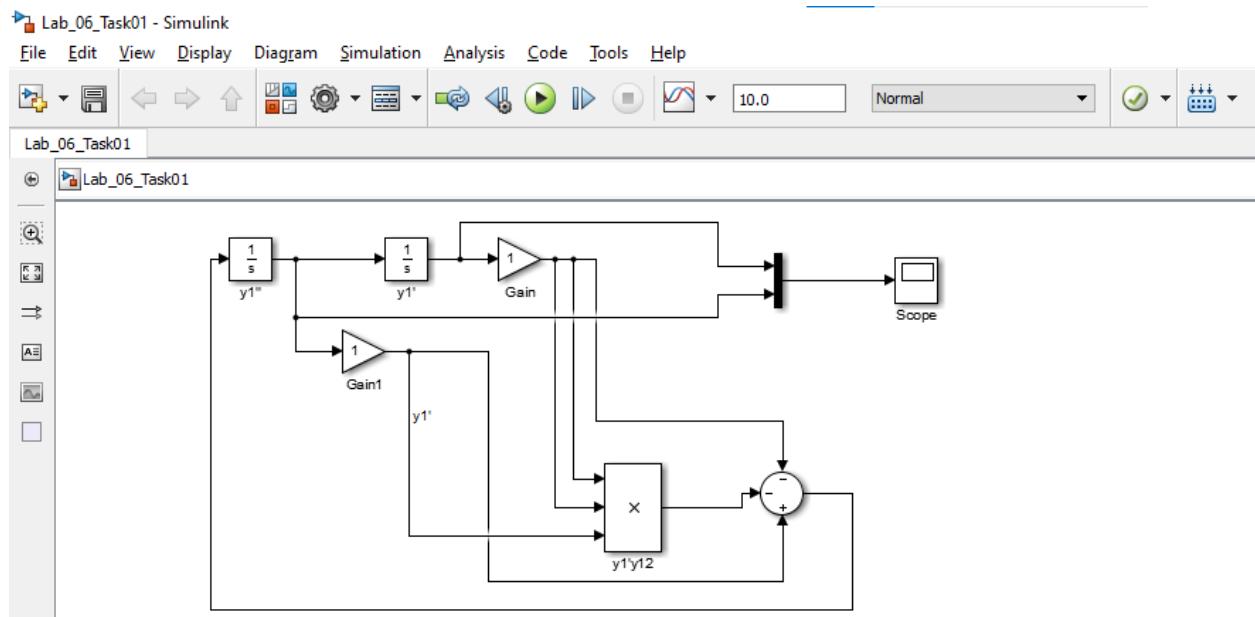University of Engineering and Technology, Peshawar

Objectives:

- To analyze ODEs on Simulink with initial values
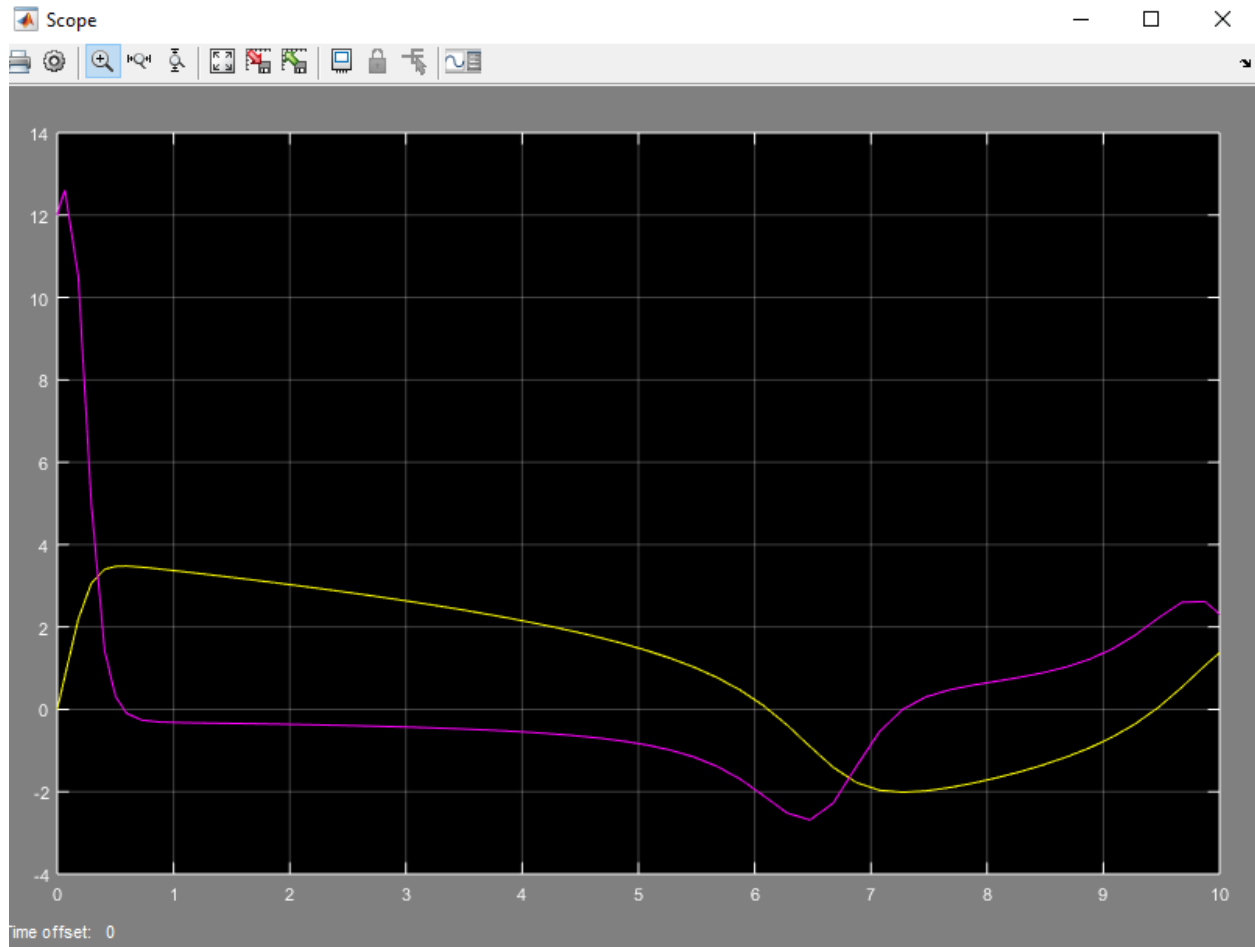- To know how to use Simulink components such as gain, integrator, and multiplexer

Task 01:
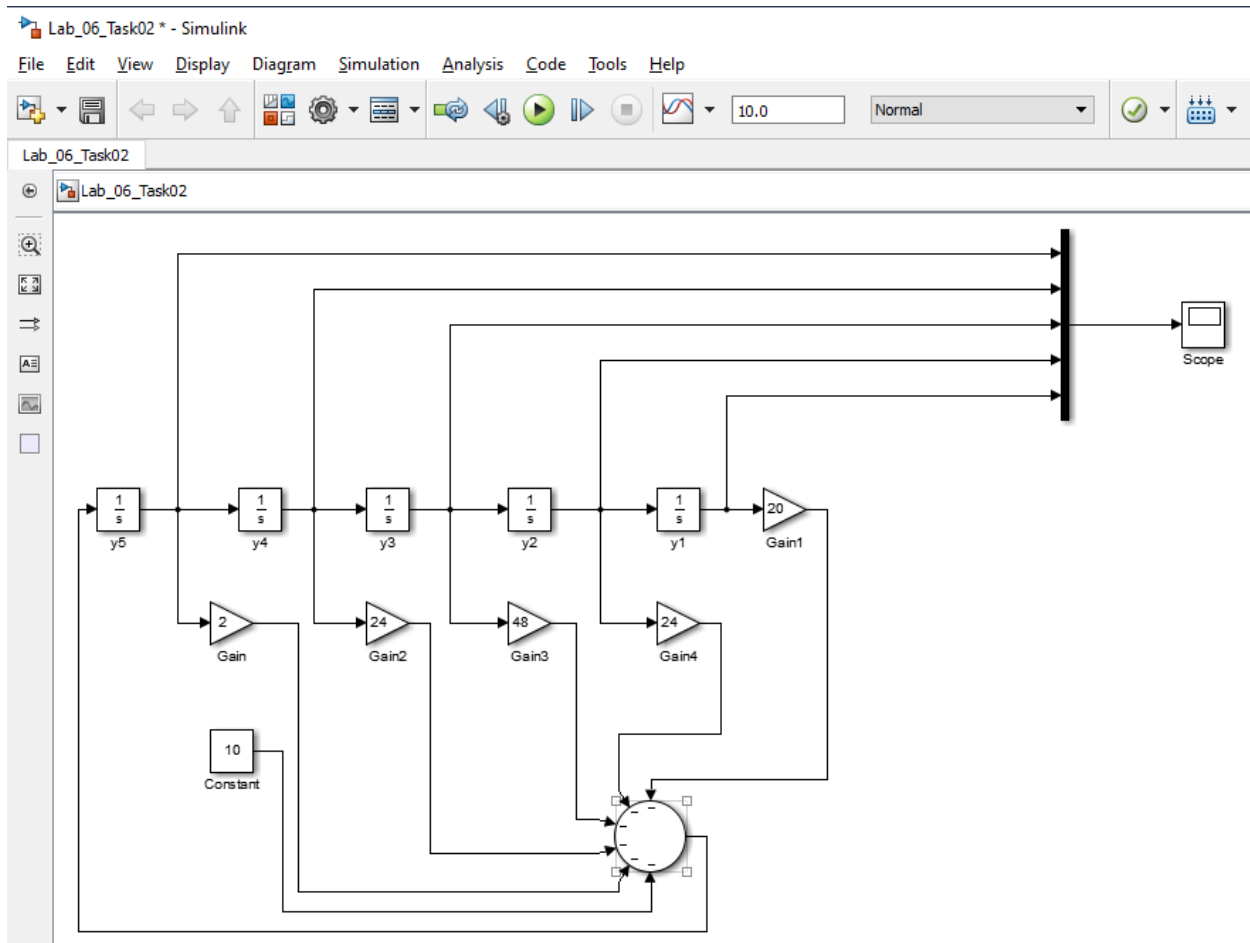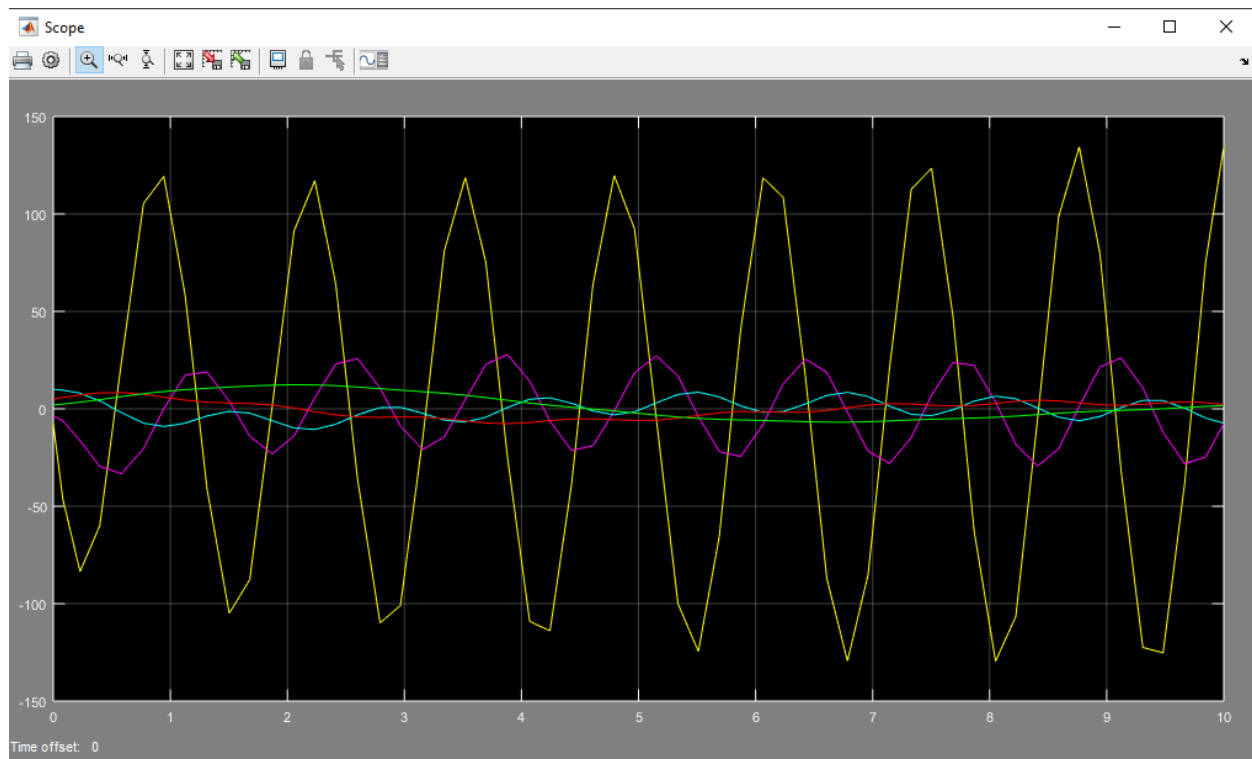
Equation:

$$y'' + y^2 y' - y' + y = 0$$

$$y'(0) = 0 \, , \, y''(0) = 12$$

Task 02:

y''''' + 2y'''' + 24 y''' + 48 y'' + 24 y' + 20 y + 10 = 0

y(0) = 2 , y'(0) = 5, y''(0) = 10, y'''(0) = -4, y''''(0) = -7

File   Edit   View   Display   Diagram   Simulation   Analysis   Code   Tools   Help

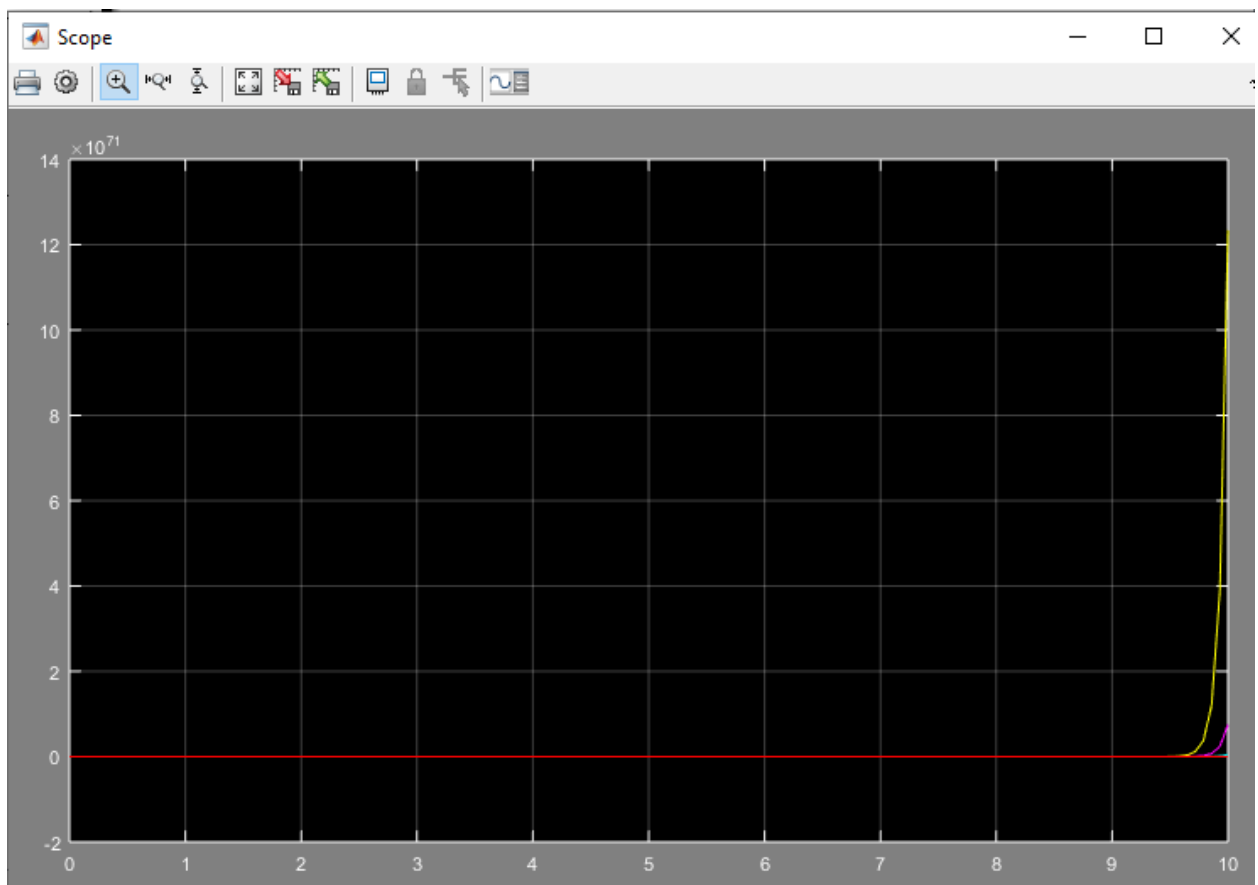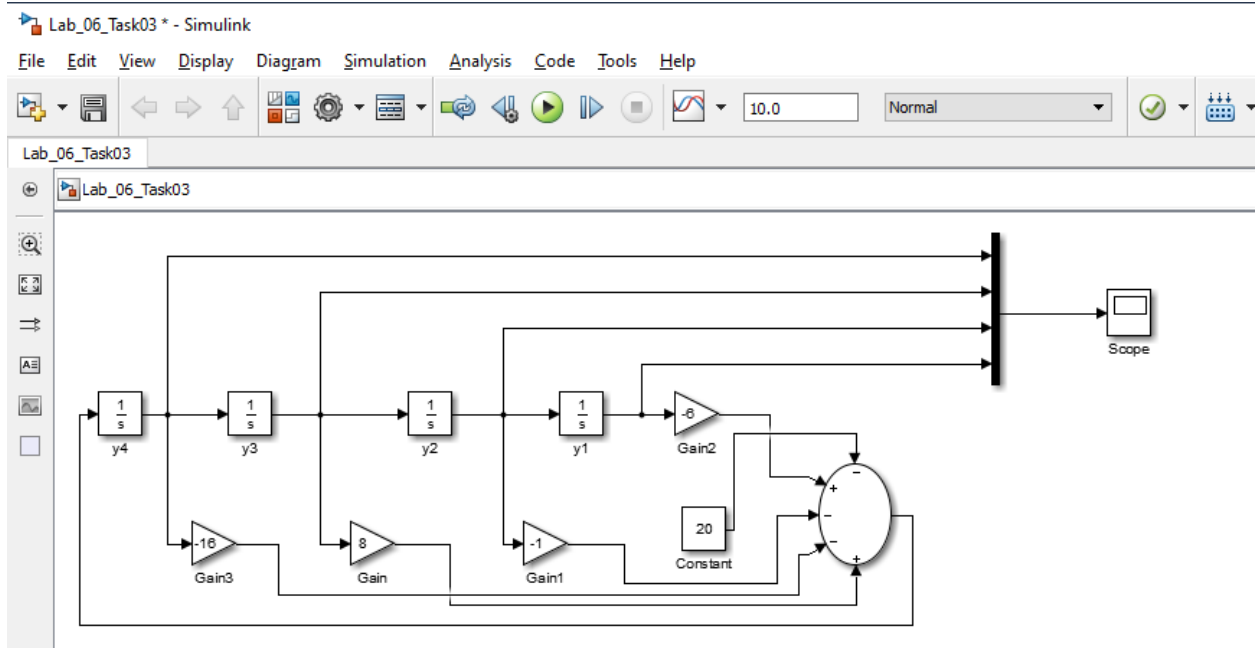10.0   Normal

Lab_06_Task02

Lab_06_Task02

Task 03:

-16 y''' + 8 y'' - y' - 6 y + 20 = 0

y(0) = 4, y'(0) = 0, y''(0) = -6, y'''(0) = 2

End