

Birzeit University  
 Mathematics Department  
 Math331  
 Quiz 6

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 Section: (5)

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Question I [4 points]. Find the form of  $y_p$  for the following DE.

$$y''' + y'' = e^t \cos t. \quad R^3 + R^2 = e^t \cos t$$

Question II [6 points]. Solve the following homogeneous differential equation

$$4y''' + y' + 5y = 0.$$

~~The aux. eq. is  $4R^3 + R + 5 = 0$~~

~~The aux. is  $R^3$~~

~~The aux. is  $R^3 + R^2 = 0$~~

~~$R^2 + R^2$~~

$y_h$ : The aux. is  $R^3 + R^2 = 0$

$R^2(R+1) = 0 \quad R = 0, 0, -1$

$y_h = C_1 + C_2 t + C_3 e^{-t}$

$y_p = (Ae^t) \cos t + (Be^t) \sin t$  ✓

Good Luck