

Q1. Find annihilators of the following functions:

(a)  $e^x + e^{-x}$

(b)  $x \cos x$

(3): Find function(s) that are annihilated by the operator  $D^2 - 2D + 2$

(4): Use method of undetermined coefficients to solve  $y''' + y' = x^3$  where solutions of the associated homogeneous equation are  $\{1, \cos x, \sin x\}$ .

Q5. Use the variation of parameter method to solve  $y''' + y' = \tan x$ .