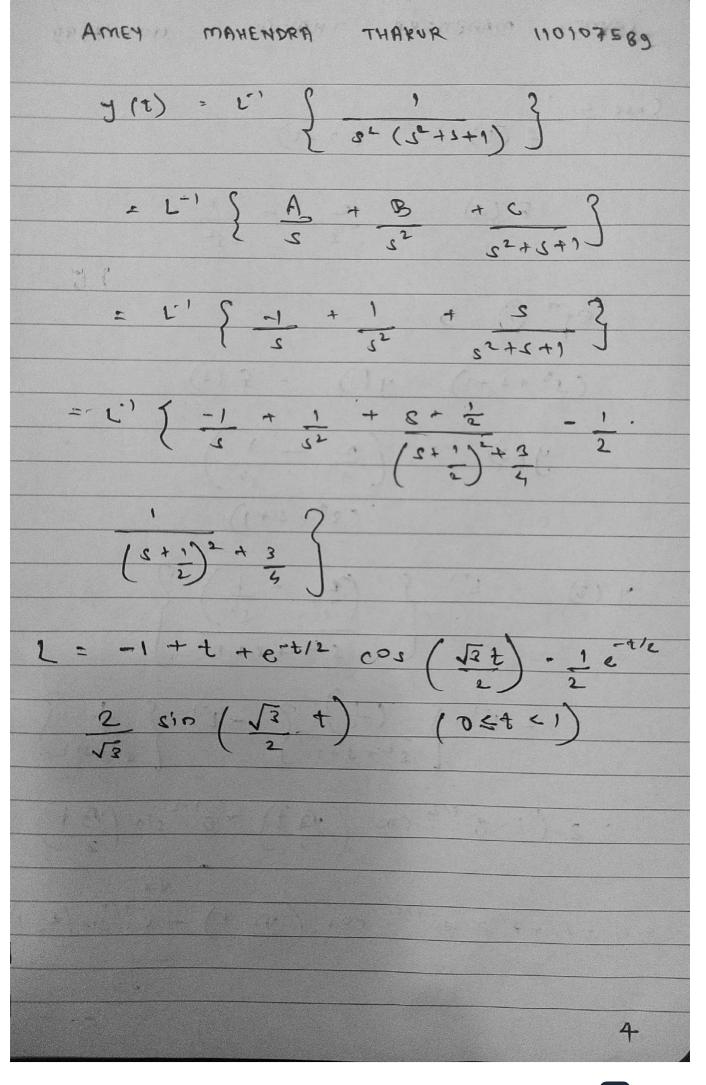
AMEY MAHENDRA THAKUR 110107589 91 a) Find Laplace Transform 2 € € (8) 3 = ∫ € 2 t + (6) 4 t  $= \int e^{-st}(t) dt + \int e^{-st}(2-t) dt + \int E^{st}(0) dt$ Following ILATE in integrals  $e^{-st}$   $-\int (e^{-st}) dt + (2-t) \int_{-\infty}^{\infty} e^{-st}$  AMEY MAHEHDRA THAKUR 110107589

AMEY MAHENDRA THAKUR (10107589 B) A (0) =1 ' A, (0) = 0 y"+ + y'(0) + y(1) = f(+) Taking laplace transform on boom vides (1) \$ = (1) 6 + (1) 65 + (1) 6, 5 = 5 (1) - (2) x (141+2) = 3 cases (ase i : 1 + c): -. FW = 1 52 = Eg^ () => (12 + 2 +1) y(D = 1 7 (1) 3 1 (32+371) 3



AMEY MAHENDRA THAKUR 11010 7589 Case 2 : f(t) = (2-t)F (1) (75+7+1) A(D) = E(1) 7(1) = 7(1) (1-e-+/2 (a) -1 ++ Te+/2 CON ( VI +) - e+/2 sin (13) 13

AMEY MAHENDRA THAKUR 110107589 = 2 ( 1 - e - 1/2 con ( 5) - e - sin ( N3 +  $-(-1+t+e^{-4/2}\cos(\sqrt{3}+)-e^{4/2}\sin(\sqrt{3}+)$ 115 + 62 Care 3: When ±32 F (1)= 0 o = (2) 7 -. y(+) = 0