

**A 12**

**Sreenidhi Institute of Science & Technology**

(An Autonomous Institution)

**Code No: 121MA04**

**B. TECH. I – Year II – Semester Examinations, July, 2014 (Regular)**

**MATHEMATICS FOR BIOTECHNOLOGY II ( BT )**

**Time: 3 Hours Max. Marks: 70**

**Note: No additional answer sheets will be provided.**

**Part-A**

**Max.Marks:20**

**Answer all QUESTIONS.**

1. Solve =tanx

2. Define law of Natural Growth &Decay

3. Solve (D2-1)y =0

4. Find Particular Integral of ( D2-1)y = Sin2x

5. Solve p + q= x + y

6. Define Even & Odd function of Fourier Series.

7. Find L{Sinht }

8. Define L { teat}

9. Solve p + q = z

10. Find L-1{1/s+1}

**Part – B**

**Max. Marks: 50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

1. a) Solve + = sinx

b) Solve ( D2 + 10D +9) y = ex + x

2. a) Solve ( D2+ 1 )y = Cosecx

b) Express f(x) = x as a half –Range Cosineseries

3. a) Find L-1 {( s2 + 3s + 5)/ s5 }

b) Find L{Sin3tCos2t}

4. a) State and prove Convolution Theorem

b) Find L {e at/t}

5. Solve ( D3-3D2+3D -1)y= t2et Given that y(0)= 1 , y1(0)=0, y11(0)=-2

6. Solve Simultaneous Differential equation

+ 5x -2y = t; +2x + y =0

7. a) Express the Fourier series for f(x) = x2 in -π<x<π

b) Define Unit Step & Dirac1s delta function for Laplace transform

8. Find the Fourier series for f(x) = |x| and hence show that

1+ 1/32+1/52+- - - - - - = π2/8.

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