

**Set No : 2**

**A 12**

**Sreenidhi Institute of Science & Technology**

(An Autonomous Institution)

**Code No: 121MA03**

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

**ENGINEERING MATHEMATICS – II (Common to ECE, ME and ECM )**

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

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

**Part-A**

**Max.Marks:20**

**Answer all QUESTIONS.**

1. If f(t) is a periodic function of period ‘T’ ,then L[f(t)] =?

2. Explain Dirichlet conditions for the Fourier series

3. Find Z [n2ean ]

4. Solve (D2+1)2y=0

6. Solve +x = y2

7. Solve (D 3 +1)y = 0

8. Form a partial differential equation by eliminating arbitrary function Z = f (x2 –y2) where f is arbitrary function

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

10. Find L {Sin2t}

**Part – B**

**Max. Marks: 50**

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

1. a) Evaluate L -1 {(2S2 -4)/ (s+1) (s+2)(s+3)}

b) Find the Laplace Transform of the periodic function known as saw tooth wave ,

0<t<T, f ( T+ t ) = f(t)

2. a) Find the Half-range cosine series of f(x) = x2  in the range 0<x <π

b) Find the Fourier Series in ( -2, 2 ) if f(x) = 0 -2<x<0

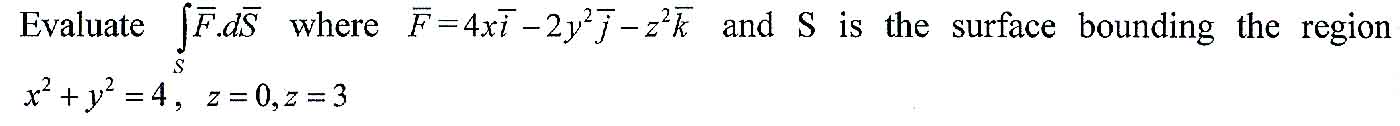
= 1 0<x<2

3. a) Solve by Z-Transform yn+2  +4yn+1 +3yn =3n with y (0) =0, y1(1)= 1

b) Show that z{ ansinhnθ} = az Sinhθ/ ( z2-2azCoshθ+a2)

4. a) Find the Fourier Cosine Transform of

b) State and prove Convolution theorem for Z-Transform.



5.

6. a) Prove that .

b) Using Gauss divergence theorem, Evaluate , where  and s is the surface of the region bounded by x=0,y=0,z=0,y=3 and x+2z=6.

7. a) Solve (D3+D2+2D+2)y=coshxcos2x

b) Solve (y11+y)y=cosec x

8. a) Find Fourier transform of f(x)=1-x2 .

b) Find Fourier sine transform of f(x)=e-x.

**-- 00 -- 00 --**