

**A10**

**Sreenidhi Institute of Science & Technology**

(An Autonomous Institution)

**Code No: 101MA06/111MA06**

**B. TECH. II – Year I – Semester Examinations, MAY/JUNE, 2014 (Supplementary)**

**MATHEMATICAL METHODS (Common to EEE and ME)**

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

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

**Part - A (Objective Type)**

**Max.Marks:20**

**Answer all QUESTIONS.**

1. Show that 
2. Construct the divided difference table for the given data y(*-*3)=18; y(-2)=12; y(-1)=8

y(1)=6; y(2)=8

1. Write the Newton Raphson method.
2. Evaluate , byTrapeziodal rule with h=0.5
3. Write Piccard’s successive approximation method for the solution of
4. Solve in the range for the initial condition using the Taylor’s seriesMethod.
5. Eliminate the arbitrary constants and from to obtain thePDE governing it.
6. Find the solution of 
7. Find the Fourier Transform of  and otherwise.
8. Show that 

**Part – B**

**Max. Marks: 50**

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

1. a) Calculate the value of y when x=1981 from the following data

b) Using the Lagrange interpolating formula, fit a polynomial to the data

1. a) Obtain Least Squares polynomial approximation of degree one for on [0,1]

b) Fit a straight line of the form to the data

1. a) Use the Regula False method to find a real root of the equation

which lies between (-2,-1).

b) Find a real root of the equation by using the Bisection method.

1. a) Evaluate by using Trapezoidal Rule.

b) Use Simpson’s rule to find by using .

1. a) Solve when , using Taylors series upto with .

b) Using the Euler’s method, obtain the solution of IVP , with , for the range in steps of h=0.2

1. a) Find the general equation of the PDE*.*

b) Solve , by using the method of separable variables

1. a) Find the Fourier Transforms of  and 

b) Find the Fourier Transforms of 

1. a) Express in terms of Legendre polynomials.

b) Prove that .

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