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Register Number:

DATE:19-04-2017

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27**

**M.Sc. MATHEMATICS – II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2017**

**MT 8414: Partial Differential Equation**

**Time- 2 ½ hrs Max Marks-70**

**This question paper has two printed pages.**

**Answer any seven from the following questions**

1. Determine the general solution of the following PDE’s by setting

(a)

(b) [6+4]

1. Derive the PDE governing small transverse vibration of an elastic string. Specify the appropriate initial and boundary conditions to be employed. [10]
2. Reduce the PDE: to its canonical form for elliptic case. [10]
3. Solve by Monge’s method. [10]
4. Derive Cauchy’s problem for the vibrating string-The D’Alembert’s solution. [10]
5. Determine the solution of initial boundary value problem by Fourier decomposition method [10]
6. Solve the following initial boundary value problem using Laplace transform method

(a)

(b) [5+5]

**MT 8412-A-17**

1. Solve the initial boundary value problem using Fourier transform method.   
    [10]
2. Solve the initial boundary value problem using Duhamel’s principal

[10]

1. Solve the initial boundary value problem using Dirichlet problem

[10]

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