**ANNUAL EXAMINATION 2020**

**(Only for Regular Students)**

***Centre No. 135 Centre Name- Disha College, Raipur (C.G.)***

**Class-B.Sc.-II Subject- Mathematics**

**Paper No- II Paper Name- Differential Equation**

**Time- 3 hrs. M.M.-50**

**Note-Attempt any two questions from each unit. Each question carry equal marks.**

UNIT-I

ç’u 1 vody lehdj.k dks gy dhft,A

Solve the differential equation

ç’u 2 fl) dhft,%

Prove that:

ç’u 3 For strum Liouville problem

Find the eigen values and eigen functions.

LoeZ Y;wfoyh leL;k %

ds vkbxsu ekuks vkSj vkbxsu Qyu dks çkIr dhft,A

UNIT-II

ç’u 1 n’kkZb;s fd ;fn rc

Find Then show

ç’u 2 laoyu çes; dk ç;ksx djds dk eku Kkr dhft,A

We use convolution theorem to find the value of

ç’u 3 ykIykl #ikUrj.k dk ç;ksx djds fuEufyf[kr lekdyu lehdj.k dks gy dhft,%

Solve the following integral equation by using Laplace transform.

UNIT-III

ç’u 1 pkfiZV fof/k ls gy Kkr dhft,% px + qy = pq

Solve the partial differential equation px + qy = pq by charpit’s method.

ç’u 2 iw.kZ gy Kkr dhft,%

Find the complete integral

ç’u 3 gy dhft,%

Solve.

UNIT-IV

ç’u 1 vkaf’kd vody lehdj.k % dk oxhZdj.k vkSj fofgr #i ls leku;u fdft,A

Classify and reduce the partial differential equation. to canonical form.

ç’u 2 eksUts fof/k ls vkaf’kd vody lehdj.k% + dks gy dhft,A

Solve the differential equation + using monge’s method.

ç’u 3 gy dhft,%

Solve:

UNIT-V

ç’u 1 ijoy; y = x2 rFkk ljy js[kk x-y=5 ds e/; y?kqre nwjh Kkr dhft,A

Find the shortest distance between the parabola y = x2 and the straight line x-y=5.

ç’u 2 Qyu dk pje eku ds fy, ijh{k.k dhft,A

where ,

Test for the extremum for the functional.

where ,

ç’u 3 Qyu dk pje eku ds fy, ijh{k.k dhft,A

Find the extrema of the functional

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