

# B-DIV

## SMT.INDIRA GANDHI COLLEGE OF ENGINEERING

MAX MARKS: 20

UNIT TEST I

APPLIED MATHEMATICS II (F.E-B)

Q.No.1: Attempt the following questions

a) Solve  $(x^4 + y^4)dx - xy^3dy = 0$ . [CO1](3)

b) Solve  $\frac{dy}{dx} + y = y^2(\cos x - \sin x)$ . [CO1](3)

c) Find P.I of  $(D^2 - 2D + 1)y = xe^x \sin x$ . [CO2](2)

d) Write equations for R.K.Method of fourth order and explain. [CO3](2)

Q.No.2: Solve any one

[CO2](5)

a) Solve by Method of Variation of Parameters the differential equation

$$(D^2 - 3D + 2)y = \frac{e^x}{1+e^x}$$

b) Solve  $(D^2 + 2)y = x^2e^{3x} + e^x - \cos 2x$

Q.No.3: Solve any one

[CO3](5)

a) Apply R.K.Method of fourth order to find an approximate value of y at x=0.2

if  $\frac{dy}{dx} = x + y^2$ , given that  $y_0 = 1.1165$ ,  $x_0 = 0.1$ .

b) Using Taylor's series method find the solution of  $\frac{dy}{dx} = xy - 1$  at x=1.02 given that

$y_0 = 2$ ,  $x_0 = 1$ .

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