

Krutika.



PILLAI COLLEGE OF ENGINEERING, NEW PANVEL
INTERNAL ASSESSMENT EXAMINATION- I

SEMESTER - II (CBCGS)

Time: 1 Hour

Date: 27-2-2017

BRANCH : ALL(FE)

Sub:AM-II

Max. Marks: 20

NOTE : 1) Figures to the right indicates FULL marks.

Q.1 Attempt any five questions out of six

- a) Solve $(D^4 + 1)y = 0$ 2
- b) Solve $x \frac{dy}{dx} - y = x^3 \cos x$ 2
- c) Solve $\frac{dy}{dx} = x^3(x+y)^3 - x(x+y) - 1$ 2
- d) Find integrating factor of $(4xy + 3y^2 - x)dx + x(x + 2y)dy = 0$ 2
- e) Find Particular integral of $(D^2 + 2)y = e^x \cos x + x^2 e^{3x}$ 2
- f) Solve $\left(\frac{y^2}{1+x^2} - 2y\right) dx + (2y \tan^{-1} x - 2x + \sinh y)dy = 0$ 2
- Q.2 a) Solve $x \sin x dy + [y(x \cos x - \sin x) - 2] dx = 0$ 5
- OR
- b) Determine value of y for (i) $x=0.05$ (ii) $x=0.1$ given that $y(0)=1$ & $\frac{dy}{dx} = x^2 + y$ by Euler's modified method correct up to four decimal places & compare with exact value. 5
- Q.3 a) Solve $\frac{d^2y}{dx^2} + y = \operatorname{cosec} x$ 5
- OR
- b) Solve $\frac{dy}{dx} = xy$ with initial conditions $y(1)=2$ & find approximate value of y at (i) $x=1.2$ (ii) $x=1.4$ by Runge-Kutta Method of fourth order. Also compare with exact value. 5

x.u
x(1)cos2

PLATE