GOVERNMENT COLLEGE OF ENGINEERING, AMRAVATI
(An autonomous institute of Govt. of Maharashtra)

CT-1 W- 2015 SHU303 [ELPO/EXTC/IN] ENGG.MATHS-III MARKS-15 TIME-1 HOUR

Q.1 Solve the simultaneous equation $\frac{d^2x}{dt^2}-3x-4y=0,\ \frac{d^2y}{dt^2}+x+y=0$. 3

Q.2 Solve $x^2\frac{d^2y}{dx^2}-3x\frac{dy}{dx}+y=\log x\frac{\sin(\log x)+1}{x}$. 3

Q. 3 ATTEMPT ANY THREE 9

(A) Solve $\frac{1}{8x^2}\left(\frac{d^2y}{dx^2}-4\frac{dy}{dx}+4y\right)=e^{2x}\sin 2x$

(B) Solve $\left(D^2+5D+6\right)y=e^{-2x}\sec^2 x\left(1+2\tan x\right)$

(C) Solve the method of variation of parameter $(D^3+D)y=\tan x$

(D) Solve $\left[(3x+2)D^2+3D\right]y=\frac{3x^2+4x+36y+1}{(3x+2)}$

GOVERNMENT COLLEGE OF ENGINEERING.
(An autonomous institute of Govt. of Maharashtra)

CT-1 W-2016 SHU-304 ENGG. MATHS-III [CS/IT] MARKS-15 TIME-1 HOUR

Date-04/08/2016

ATTEMPT ANY FIVE **15**

Q.1 Solve $x^2\frac{d^2y}{dx^2}+4x\frac{dy}{dx}+2y=e^x$

Q.2 Solve $(D^2+2D+1)y=2\cos x+3x+2+3e^x$

Q.3 Solve $\frac{d^3y}{dx^3}+y=\sin 3x-\cos^2\frac{x}{2}$

Q.4 Solve $(2+x)^2\frac{d^2y}{dx^2}+(2+x)\frac{dy}{dx}+y=2\cot[\log(2+x)]$

Q.5 Using the method of variation of parameters solve $(D^2+4)y=4\sec^2 2x$

Q.6 Solve $(D^2-1)y=x\sin x+(1+x^2)e^x$