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 $(D^2-1)y=x\sin x+(1+x^2)e^x$

GOVERNMENT COLLEGE OF ENGINEERING, AMRAVATI
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CT-1 [Direct-IInd year] W- 2015 **MARKS-15 TIME-1 HOUR**
SHU301,SHU303, SHU304 ENGG.MATHS-III [CIVIL/ MECH/ELPO/EXTC/CS/IT/IN]

Q.1 Using the method of variation of parameters Solve

$$\left(1+\frac{1}{e^x}\right)^2\left[\left(D^2-1\right)y\right]=1$$ **3**

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

Q. 3 ATTEMPT ANY THREE **9**

(A) Solve $\left(D^3+1\right)y=\cos^2\left(\frac{x}{2}\right)+e^{-x}$

(B Solve $\dfrac{1}{e^x}\left(\dfrac{d^2y}{dx^2}-2\dfrac{dy}{dx}+2y\right)-\tan x=0$

(C) Solve the method of variation of parameter $\dfrac{d^2y}{dx^2}+y=\tan x$

(D) Solve $(1+x)^2\dfrac{d^2y}{dx^2}+(1+x)\dfrac{dy}{dx}+y=2\sin\log(1+x)$