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

CT-2 W-2017 ENGG. MATHS-III (SHU-301-Civil, Mech)

TIME-1 HOUR **Date – 18/09/2017** **MARKS-15**

Q1. Solve by using separation method $\frac{\partial^2 z}{\partial x^2} + z = 0$, give that when $x = 0$ $z = e^y$ *and* $\frac{\partial z}{\partial x} = 1$ **(3)**

Q2. Attempt any four **(12)**

a. Solve $(xy^3 - 2x^4)p + (2y^4 - x^3y)q = 9z(x^3 - y^3)$

b. Solve $z^2(p^2x^2 + q^2) = 1$

c. Solve $(1 - y^2)xq + y^2p = 0$

d. Solve $(x^2 + y^2)(p^2 + q^2) = 1$

e. Evaluate $\int_0^\infty te^{-2t} \cos t \, dt$ by using Laplace.