

$$4xyz = pq + 2px^2y + 2qxy^2$$

$$2xp^2 + 2xq^2$$

$$p = yP + Q$$

$$q = xP + a$$

$$4z = \frac{(yP+Q)(xP+Q) + 2xyP^2}{xy} + 2x^2yP^2 + 14$$

$$4z = \frac{pq}{xy} + 2px + 2qy$$

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

CT-II

W-2014

MARKS-15

TIME-1 HOUR

$4z = \frac{\partial z}{\partial x} + \frac{1}{y} \frac{\partial z}{\partial y} + 2px + 2qy$ SHU301, SHU303, SU304 ENGG.MATHS-III [Civil/Mech/ELPO/EXTC/CS/IN/IT]

Q.1 Solve by using the Separation of variables method

$$u_{xx} = u_y + 2u, \quad u(0, y) = 0, \quad \frac{\partial}{\partial x} u(0, y) = 1 + e^{-3y}$$

Q.2 Solve $(z - xp - yq)^{\frac{1}{2}} = a(x^2 + y^2 + z^2)$

Q.3 ATTEMPT ANY THREE

(A) Solve $pq = x^m y^n z^l$ ③

(B) Solve $2x^{\frac{1}{2}} y^{\frac{1}{2}} z^{\frac{1}{2}} = (pq + 2px^2y + 2qxy^2)^{\frac{1}{2}}$

(C) Solve $(x+y)(p+q)^2 + (x-y)(p-q)^2 = 1$ ③

(D) Solve $yp = 2yx + \log q$ ③

$$\frac{dt}{dx} + \frac{dx}{dt}$$

$$2 - a^2 t^2 - 1/t - a^2 z t^2$$

$$t + 2 - 1$$

Que5) Evaluate:

$$\text{i) } \int_{-\infty}^{\infty} \left| \frac{e^{-t} - e^{-3t}}{t} \right| dt$$

$$\text{ii) } \int_{-\infty}^{\infty} \frac{e^{-2t} \sinh t}{t} dt$$

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

CT-II

W-2015

MARKS-15

TIME-1 HOUR

SHU303 ENGG. MATHS-III [ELPO/EXTC /IN]

Q.1 Solve by using the Separation of variables method

$$u_{xx} - 2u = u_y, \quad u(0, y) = 0 \quad \frac{\partial}{\partial x} u(0, y) = 1 + e^{-3y}$$

Q.2 Solve $p = \sqrt{\frac{1 - y^2(p^2 + q^2)}{x^2}} - q^2$

Q.3 ATTEMPT ANY THREE

(A) Solve $p(1 + q^2) = q(z - a)$

(B) Solve $x = \frac{4xyz - pq}{2y(px + qy)}$

(C) Solve $(x^2 - y^2 - z^2)p = 2x(z - yq)$

(D) Solve $yp = 2yx + \log q$

$$\left\{ \begin{array}{l} e^{an} \\ e^{an} \\ \hline a \end{array} \right.$$

$$\left\{ \begin{array}{l} e^{an} \\ \frac{1}{a} \\ \hline a \end{array} \right.$$

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(10)

CLASS TEST -2 Winter -2016

Course – SHU 301, 303, 304 Engineering Mathematics –III

Max, Marks : 15

Instructions : Attempt any five Question.

(15)

Q1:- Solve $p(1+q^2) = q(z-b)$

Q2:- Solve $q = xp + p^2$

Q3:- Solve $z^2(p^2+q^2) = x^2 + y^2$

Q4:- Solve $(3y - 2z)p + (z - 3x)q = 2x - y$

Q5:- Solve $(x^2 + y^2)(p^2 + q^2) = 1$

Q6:- Show that $\overset{\text{sol}\circ}{e} (x+y)(p+q)^2 + (x-y)(p-q)^2 = 1$