Dom3-2014 C-23

Lokmanya Tilak College of Engineering

Sub: Applied Mathematics-I (Sem-I)

INTERNAL TEST PAPER-1(2014-15)

MARKS: 20

Branch-ALL

TIME: 9.30 To 10.30

Answer all the Questions. Each Question carries 5 marks.

Q 1)Find non-singular matrices P and Q such that $A = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 2 & 1 & 4 & 3 \\ 3 & 0 & 5 & -10 \end{bmatrix}$ is reduced to normal form.

Q 2) If $u = \tan^{-1}\left(\frac{x+y}{\sqrt{x}+\sqrt{y}}\right)$, Prove that $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = \frac{1}{4}Sin2u$

Q 3) Solve the set of equations by Crout's Method

$x + y + z = 7,\ x + 2y + 3z = 16,\ x + 3y + 4z = 22.$

Q4) If $u = f(2x-3y, 3y-4z, 4z-2x)$

S.T. $6\frac{\partial u}{\partial x} + 4\frac{\partial u}{\partial y} + 3\frac{\partial u}{\partial z} = 0$
