Course No:CVL2303
Course Linear Algebra
Date: 15/01/2014
No. of Questions: (4)
Time: 2hours
Using Calculator (yes)

University of Palestine

Final Exam
2013/2014
Total Grade:60

Instructor Name: Dr. Hossam Elaqra
Student No.: _____
Student Name: _____
College Name: _____
Dep. / Specialist: _____
Using Dictionary (No)

Question One:

Find the Eigen values and Eigen vectors for AX = 0
Where the matrix A=

$$\begin{matrix} 1 & 2 & 1 \\ 0 & 1 & 0 \\ 4 & 0 & 1 \end{matrix}$$

Question Two:

A- Using **Doolittle`s Decomposition Method (LU)**.

Find the values of X_1, X_2 , $X_3$and X_4, for these equations:

$3X_1 – X_2 – X_3 + 2X_4 = -3$, $–X_1 + 2X_2 + 3X_3 – X_4= 4$, $X_1 + X_2 + 3X_4 = 4$,

and $2X_1 + X_2 – X_3+ X_4= 1$

B- Verify your answer using **Gauss-Jordan** method.

Question Three:

A- Determine if these points are collinear
- a- (1,2), (3,4), (5,0)
- b- (1,2,3), (1,0,1), (0,-2,5), (2,6,1)
- c- (-1,-3), (-4,7), (2,-13)

B- Determine if these points are coplanar
(1,2,3), (-1,0,1), (0,-2,-5), (2,6,1)

Question Four:

A- Find the area
- a- (1,1), (2,4), (4,2)
- b- (-2,5), (0,1), (3,-9)

B- Find the equation passing through these points
- a- (1,-2,1), (-1,-1,7), (2,-1,3)
- b- (1,4), (3,4)

End of Questions
Good Luck