USCS405 Linear Algebra

Sample Paper

Q1) Find the eigen values of the given 2 * 2 matrix. [1 , 0 ; 1 , 2].

a) $\lambda = 1; \lambda = 2$
b) $\lambda = -1; \lambda = 2$
c) $\lambda = -1; \lambda = -2$
d) $\lambda = 1; \lambda = -2$

Q2) For the number 84, find the number of odd factors.

a) 4
b) 6
c) 2
d) 12

Q3) Given u1 = (-1 , 0 , 2), u2 = (0 , 2 , -3) and u3 = (2 , 2 , 3). Find ||u1 - u2||

a) √30
b) √13
c) √17
d) √5

Q4) Find the angle between the vectors |a| = 4 , |b| = 1/2, a.b = √3.

a) π/6
b) π/2
c) π/4
d) π/8

Q5) In numpy library of Python _____ and _____ functions can be used to find eigen values and eigen ve

a) eigvals( ), eig( )
b) eigvalues( ), eig( )
c) eigvalues( ), eigen( )
d) eigvals( ), eig( )

Q6) If A and B be real symmetric matrices of size n x n, then_____.

a) $AA^T=1$
b) $A=A^{-1}$
c) AB=BA
d) $(AB)^T=BA$

Q7) The set { (1, -2, 6), (5, -10, 30) } is _____.

a) Linear Dependent
b) Linear Independent
c) Basis
d) Diagonal

Q8) (3 + 4i) + (5 -5i) = _____.

a) 8 - i
b) 8 + 8i
c) 8 - 8i
d) 7 + i

Q9) In GF(2) field, (1 + 1 + 1 + 1 +1) is equal to_____.

a) 0
b) 1
c) -1
d) -2

Q10) If $\alpha = 3$ is a scalar and v = (2, 4, 5) is a vector in R^3 then αv is equal to _____.

a) 33
b) 14
c) (6, 12, 15)
d) (5, 7, 8)

Q11) Find the dot product of a=(1,-2,3) and b=(0,2,3).

a) 15
b) 7
c) 5
d) 8

Q12) In _____property of Dot Product a.b=b.a

a) Homogeneous
b) Commutative
c) Distributive
d) Equalness