	Kushal JANN Classmate
	SMAI ASSIGNMENT2
81	be performed on diagonizable matrice
A)	a diagonizable matrix is disconside
	investible matrix p such that
	PXAXP Where A is discombally
	cend Dis Diagonal matrix. Singular matrix decomposition can
	performed on any mxn modifi
	Mence Singular value decomposition is more Generalizable.
R	Find singular value decomposition of -
A	= 12
	[14 -2]
	= $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$
	14-2
	= 1.80 100 40
	100, 170 140 40 140 200
	to find eigen values, solve W-17/0 =0
	100 170-1 140 HO 1'46 200-1

=)
$$-\frac{1}{3}$$
 + 450 $\frac{1}{2}$ - 32400 $\frac{1}{2}$ = 0
=) $\frac{1}{2}$ (1-90) (1-360) = 0
=) $\frac{1}{2}$ = 0,90,360
8° Eigenvalues = 0,90,360

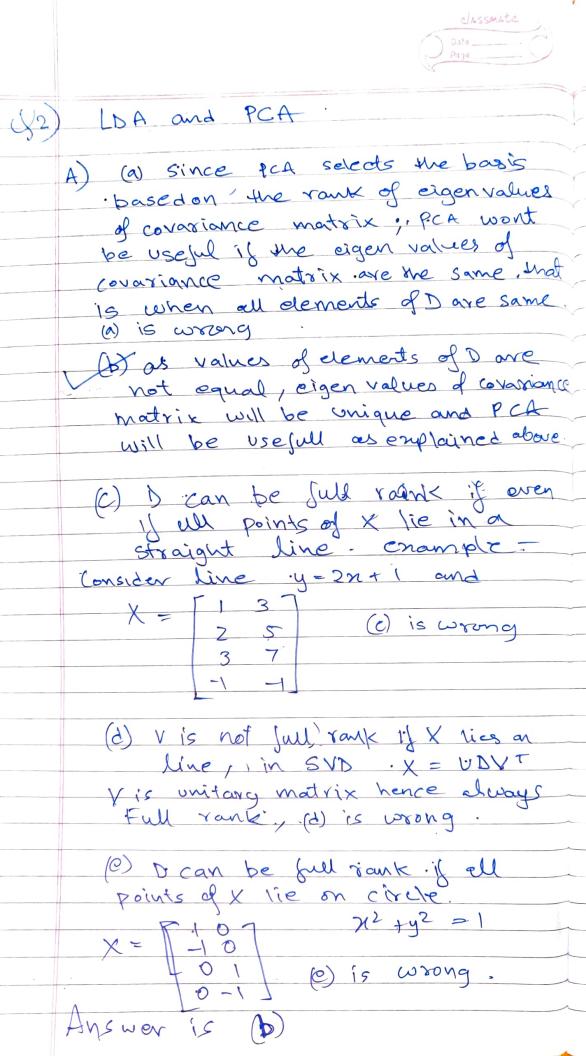
$$\frac{3}{2} = \frac{1}{\sqrt{5}} = \frac{1}{\sqrt{10}} = \frac{1}$$

$$\frac{1}{2} = \frac{1}{\sqrt{62}} A^{T} u_{2} = \frac{1}{3\sqrt{10}} \left[\frac{4}{8} \frac{1}{7-2} \right] \times \left[\frac{-2}{3} \frac{7}{3} \right]$$

$$= \frac{1}{\sqrt{10}} \left[\frac{1}{-3} \right]$$

Singular value decomposition -

 $\sqrt{1} = \frac{1}{3} \begin{bmatrix} 1 & -2 & 2 \\ 2 & -1 & -2 \end{bmatrix} \times \begin{bmatrix} 6\sqrt{10} & 0 \\ 0 & 3\sqrt{10} \\ 2 & 2 & 1 \end{bmatrix}$





B) True/False.

PCA will project data points on a line which preserves information useful for data classification.

[FALSE], the classic LDA enample,

PCA tries to preserve as much

information as possible but does not cave

about the between a information

about the nature of info it discourds.

A) Prior Probability - probability of an event occurring before any new evidence is introduced.

Posterior Probability - probability of an event occurring after new

evidence is introduced

B) det F (Hu) be event of person being injected by Hu.

having headache and sore throat.

We have $f(\mathbf{G}) = 0.2$ $P(\mathbf{F}) = 0.05$

P(S|F) = 0.9

By Bayes - $P(F|S) = P(S|F) \times P(F)$ P(S)

Probability of having fine given symptoms

is 22.5%