6E3109

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B.Tech VI Sem. (Main/Back) Exam. April-May, 2012
Electrical Engg.
6EE 1 Modern Control Theory

Time : 3 Hours

Maximum Marks : 80

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five questions,** selecting one question from each unit. All Question carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.*

Units of quantities used/ calculated must be stated clerly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1._____Nil_____   2. _____Nil_____

Unit-I

1   (a)   Give the Condition of liner dependency over the field of Rational numbers of set of vectors. Also Explain how it is different from Real numbers.   10

(b)   Explain the Concept of Linear vector space Linear Independence. 6

Or

1   (a)   Given:-

$$x = \begin{bmatrix} 3 & 2 & -1 \\ -4 & 0 & 1 \\ 2 & 1 & 3 \end{bmatrix} ; \qquad y = \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix}$$

Find the Representation of x with respect to the basis
{Y, XY, X²Y }   10