Linear Algebra

CSE DEPT.

**SET-4**

1. For any Operator . Show that where dim V=2. **(2017,2015)**
2. Find the matrix representation of linear operator on relative to usual basis where. **(2017,2015)**
3. Find the trace on where.
4. Consider the basis and of .

* Find the transition matrix form to
* Show that for the linear operator on defined by

1. Let be the linear operator on defined by . Verify that for any vector
2. Show that all the matrices similar to an invertible matrix are invertible.
3. For any Operator . Show that where dim V=3.
4. Let b defined by . Find and where and are the basis of
5. Define the matrix representation of relative to the basis and . Find the transition matrix from the basis and
6. Define linear mapping. Show that every linear mapping takes the zero vector into the zero vector.
7. Determine whether the following are linear mapping or not.

Where

1. Let, be the linear mapping for and . FInd a formula for ; that is .
2. Define linear operator and then define its matrix representation. Let be a basis of and Let be any operator on . Then Prove that for any vector
3. Let be the linear operator on defined by Find the matrix representation of in basis