

1)  $H$  be a graph with  $m$  edges and  $n$  vertices.

2) Given graph  $G$  on  $n$  vertices. Where  $H$  is subgraph of  $G$

[ Note instead of  $K_n$  I tell any graph  $G$  ]

[Note here  $m$  is the number of edges of  $H$  and  $n$  is the number of vertices of  $G$ ]

**Give a set of sets  $S$  of all possible  $m$ -element subsets of  $Edges(G)$  .**

Now let  $A$  be the adjacency Matrix of the graph  $G$ .

**We want to find all  $(n)$ -subsets of  $S$ .**

**With these properties**

1) The  $m$ -element sublist of edges should be isomorphic to  $H$ . [As order also matters on which copy of graph is associated with which vertex of  $G$ ]

2) Based on Adjacency Matrix of graph  $G$

i) if two vertices have an edge between them then there is one edge intersection between those two copies of  $H$  with respect to that vertex in  $G$  (That is one edge).

ii) if two vertices have no edge between them then there is no edge intersection between those two copies of  $H$  with respect to that vertex in  $G$ .

3) The union of those these intersection edges must be  $G$ .

In Example.PDF attached  $G = K_{2,2,2}$  and  $H = C_4$