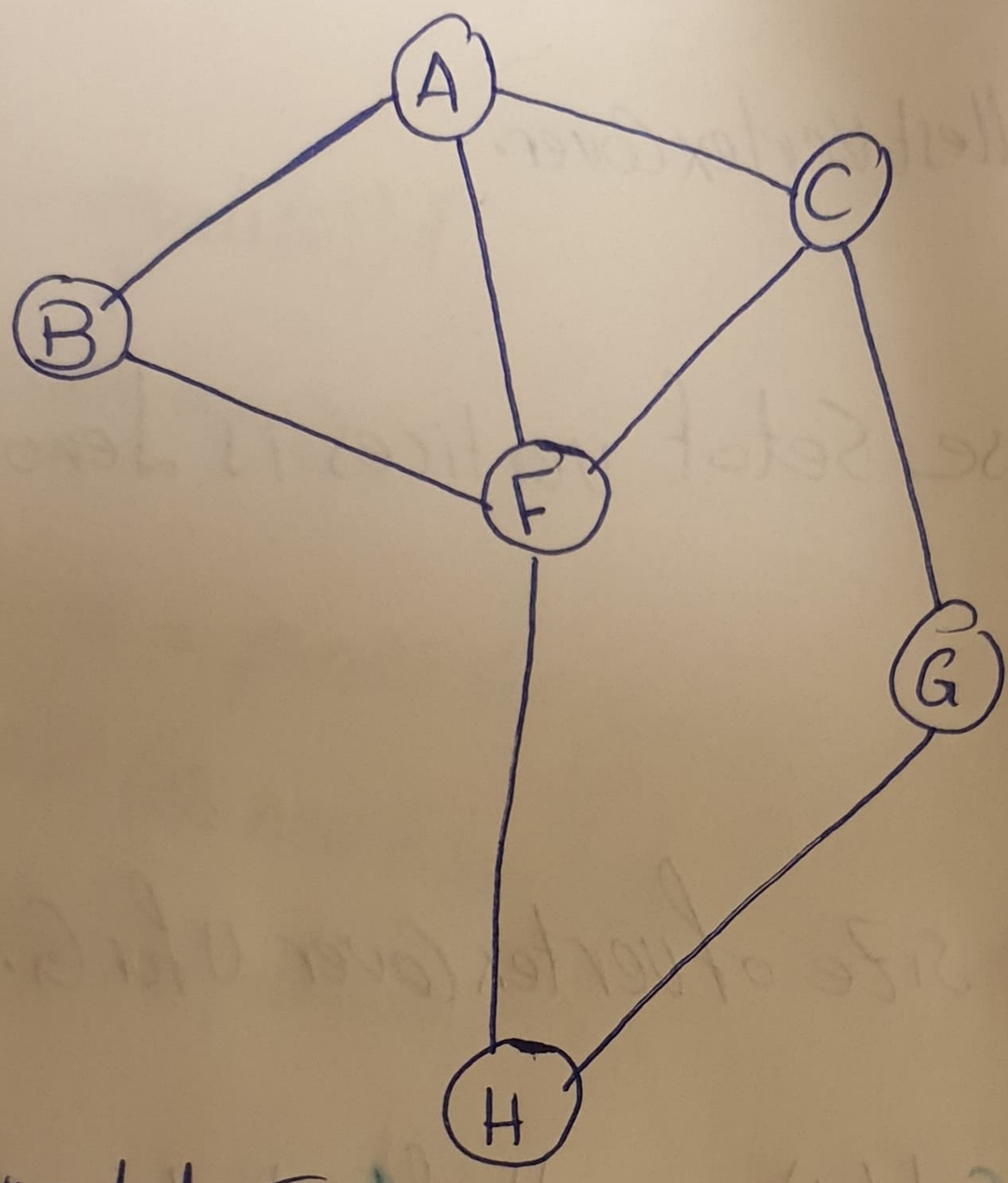
lab11:

(1) Answer about the $G=(V,E)$ display Below



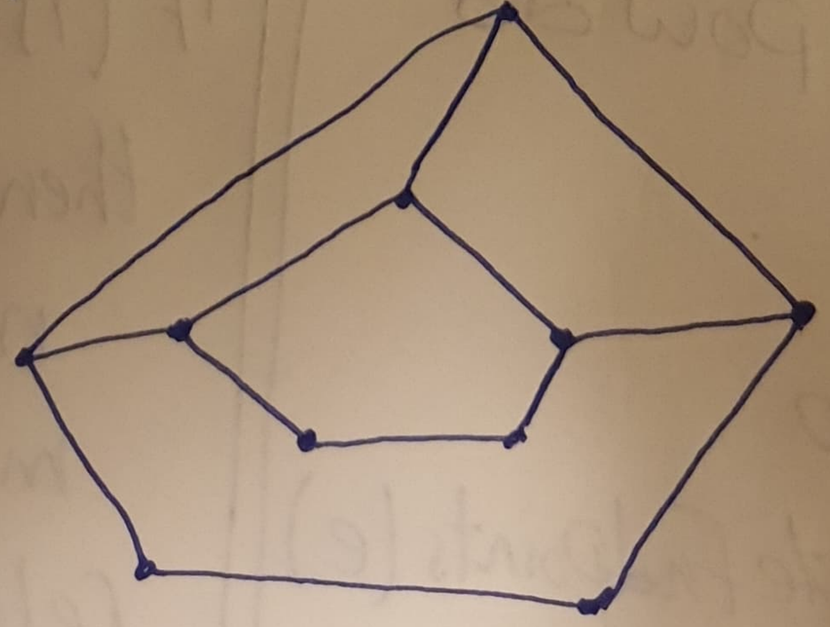
A) G is Not Connected It has two Connected Components.

B) Solution: $T=\{DE, EI, FB, FA, FC, FH, GH\}$

) Solution: No, it has No Hamilton Cycle.

) Yes. $C=\{D, E, F, A, G\}$.

Hamiltonian Graphs:



(3) express in pesudo Code an algorithm which accepts as input graph and which outputs a vertex

Algorithm: Smallest Vertex Cover.

A Graph G whose Set of vertices is denoted V and Set of edges

Output: Smallest size of vertex Cover U for G.

```
Pow ← powerSet(V)
minCover ← V
minval ← |V|
for each U in Pow do
    isCover ← true
    for each e in E do
        (u,v) ← computeEndpoints(e)
        if(!belongsTO(u,U) &
           belongsTO(v,U))
            isCover ← false
        if(isCover and U.size() < minCover.si
        then
            minCover ← U
            minval ← |U|
    return minval.
```

(5) Shortest path:

~~Graph Implementation:~~

```
list<Edge> ShortestPath (list<Edge> temp, Vertex s, vertex
{
    if(v.equals(s)){
    return temp;
}
    Vertex w = parentMap.get(v);
    temp.add(0, new Edge(w, v));
    return shortestPath(temp, s, w);
}
```