13 - Nguyễn Việt Hoàng - B22DCVT214

Date No

Bài 3, đề 1

a) Euler-Cycle(u) {

Step 1. Initialize

Stack = ∅ ;

CE = ∅ ;

push(stack, u);

Step 2: Loop

while (Stack ≠ ∅) {

s = get(Stack);

if (Adj(s) ≠ ∅) {

t = <the first vertex in Adj(s)>;

push(stack, t);

E = E \ {(s, t)};

}

else {

s = pop(Stack);

s => CE

}

}

Step 3: Result

<Overturning vertices in CE we get an Eulerian circuit>

}

NOTEBOOK

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#	Stack	CE	#	Stack	CE
b21	3	∅	11	3,2,1,5,3,4,6,7,8	7
2	3,2	∅	12	3,2,1,5,3,4,6,7,10	3
3	3,2,1	∅	13	3,2,1,5,3,4,6,7,10,1	3
4	3,2,1,5	∅	14	3,2,1,5,3,4,6,7,10,1,9	3
5	3,2,1,53	∅	15	3,2,1,5,3,4,6,7,10,1,9,6	3
6	3,2,1,5,3,4	∅	16	3,2,1,5,3,4,6,7,10,1,9	3,6
7	3,2,1,5,3,4,6	∅	17	3,2,1,5,3,4,6,7,10,1,9,7	3,6
8	3,2,1,5,3,4,6,3	∅	18	3,2,1,5,3,4,6,7,10,1,9,7,10	3,6
9	3,2,1,5,3,4,6,	3	19	3,2,1,5,3,4,6,7,10,1,9,7,10,9	3,6
10	3,2,1,5,3,4,6,7	3	20	3,2,1,5,3,4,6,7,10,1,9,7,10	3,6,9

Move the vertices from stack to CE one by one until Stack = ∅

CE: 3,6,9,10,7,9,1,10,7,6,4,3,5,1,2,3

Overturning vertices in CE we get Euler Circuit:

3-2-1-5-3-4-6-7-10-1-9-7-10-9-6-3

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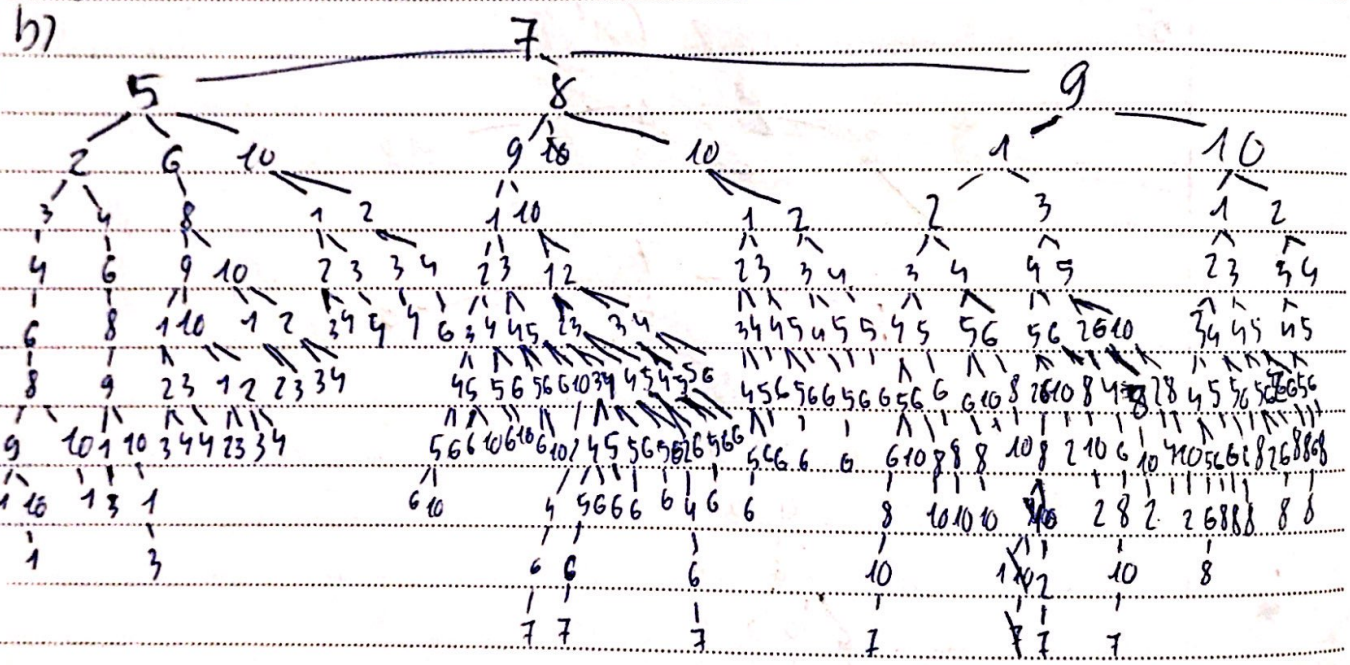
Date No

Bài 3 đề 2

a) Hamilton(int k){
    for (y ∈ Adj[X[k-1]]){
        if ((k==n+1) && (y==v0)){
            Store_Hal_Cin(X[1], X[2], ... X[n]);
        else if (unCheck[y]==true){
            X[k] = y;
            unCheck[y] = false;
            Hamilton(k+1);
            unCheck[y] = true;
        }
    }
}

b)



Hamilton circuits starting from vertex 7 of the given graph:

7 - 8 - 9 - 1 - 3 - 5 - 10 - 2 - 4 - 6 - 7

7 - 8 - 9 - 10 - 1 - 2 - 3 - 4 - 5 - 6 - 7

7 - 8 - 9 - 10 - 1 - 3 - 5 - 2 - 4 - 6 - 7

7 - 9 - 1 - 2 - 3 - 4 - 5 - 6 - 8 - 10 - 7

7 - 9 - 1 - 3 - 4 - 5 - 6 - 8 - 10 - 2 - 7

7 - 9 - 1 - 3 - 5 - 2 - 4 - 6 - 8 - 10 - 7

13 - Nguyễn Việt Hoàng - B22DCVT214

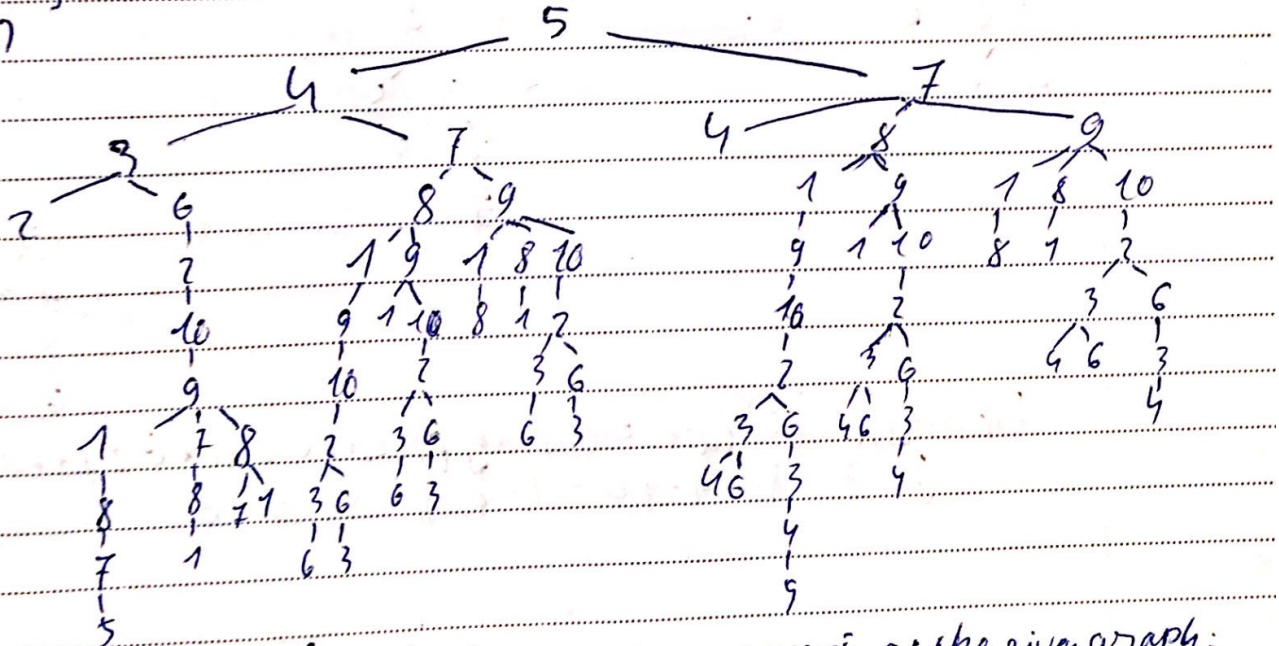
Date No

Bài 3 đề 3:

a) ~~Hamilton(int k) {~~
~~for(y ∈ Adj(X[k-1])){~~
~~Store_Hal_Cin(X[1], X[2], ... X[n]);~~

a) Hamilton(int k) {
for(y ∈ Adj(X[k-1])) {
if((k==n+1) && (y==v0)) {
Store_Hal_Cin(X[1], X[2], ... X[n]);
else if(unCheck[y]==true){
X[k] = y;
unCheck[y] = false;
Hamilton(k+1);
unCheck[y] = true;
}
}
}

b)



Hakmilton Circuits starting from vertex 5 of the given graph:

5 - 4 - 3 - 6 - 2 - 10 - 9 - 1 - 8 - 7 - 5

5 - 7 - 8 - 1 - 9 - 10 - 2 - 6 - 3 - 4 - 5

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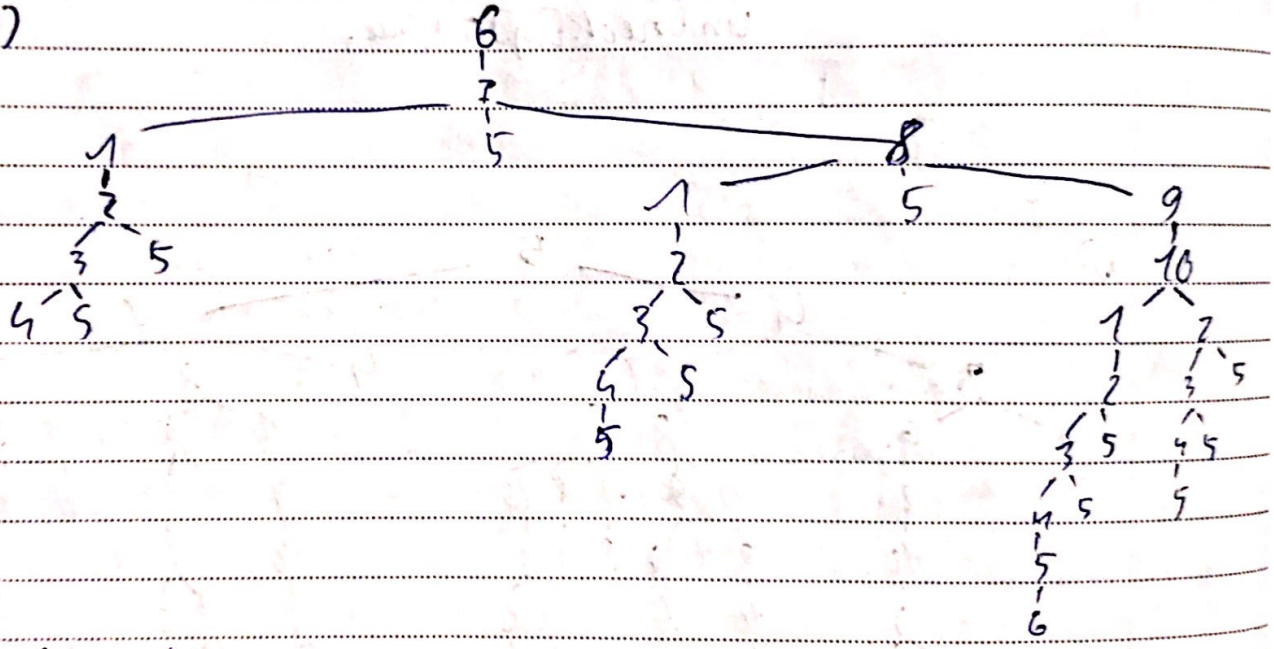
Date No

Bài 3. đề 4.

a) Hamilton(int k){
    for (y ∈ Adj(X[k-1])){
        if ((k==n+1) && (y==v0)){
            Store_Hal_Cir(X[1], X[2], .. X[n]);
        else if (unCheck[y]==true){
            X[k]=y;
            unCheck[y]=false;
            Hamilton(k+1);
            unCheck[y]=true;
        }
    }
}

b)



Hamilton circuit starting from vertex 6 of the given graph
6 - 7 - 8 - 9 - 10 - 1 - 2 - 3 - 4 - 5 - 6