Department of Computer Science and Engineering
University of Liberal Arts Bangladesh
Final Examination
Semester – Fall 2019
Course Title: Data Structure Lab
Course Code: CSE 208 (Sec: 1)
Duration: 2:00 Hours

PLEASE ANSWER ALL QUESTIONS. **Total 30 Marks**

Name: _____ **ID:** _____

QUESTION 1 10 marks

There are N countries $\{0, 1, 2, 3 \ldots . N-1\}$ and $N-1$ roads.
Emma Stone lives in Country 0 so this can be considered as the single source of the graph.
Now there are Q men who live in various countries (not equal to 0). All of them want to propose to Emma. But She has some conditions.
She will accept the proposal of the man who lives at the minimum distance from her country.
Now the distance between any two countries is the number of roads between them.
If two or more men are at the same minimum distance then she will accept the proposal of the man who lives in a country with minimum id.
No two men are in the same country.

Input Description:

The First-line consists of N, i.e. number of countries. Next $N-1$ lines each contain two space-separated integers u, v denoting that there is a road between u and v. The next line consists of Q, i.e. the number of men wanting to propose Emma. Next Q lines consist of x where the men live.

Output Description:

Print the id of the country of the man who will be accepted.

SAMPLE INPUT	SAMPLE OUTPUT
6 0 1 0 2 0 3 1 4 1 5 4 4 5 2 3	2

QUESTION 2 5 marks

Interview

QUESTION 3 10 marks

You are given a queue of N integers such that the first element represents the front of the queue. You need to dequeue at least one element from the queue. At any one moment, you can convert the queue into a stack. The last element of the queue

represents the top of the stack. Your task is to remove exactly *K* elements such that the sum of the *K* removed elements is maximized.

Input Description:

- The first line consists of two space-separated integers *N* and *K*.
- The second line consists of *N* space-separated integers denoting the elements of the stack.

Output Description:

- Print the maximum possible sum of the *K* removed elements

SAMPLE INPUT	**SAMPLE OUTPUT**
10 5 10 9 1 2 3 4 5 6 7 8	40

QUESTION 4 5 marks

Interview

****END OF QUESTIONS****