Dijstra's Algorithm Clicker Question

Below is an adjacency matrix for a weighted, undirected graph.

	A	B	C	D	E	F	G	H	I	J
A	–	–	5	–	–	–	4	9	3	4
B	–	–	–	–	–	–	5	–	–	5
C	5	–	–	–	–	1	–	–	–	–
D	–	–	–	–	–	–	7	–	–	–
E	–	–	–	–	–	2	–	–	5	–
F	–	–	1	–	2	–	1	8	–	5
G	4	5	–	7	–	1	–	–	–	–
H	9	–	–	–	–	8	–	–	4	–
I	3	–	–	–	5	–	–	4	–	–
J	4	5	–	–	–	5	–	–	–	–

Question 1: After one pass of Dijkstra's algorithm starting with node **A**, give me the order of the nodes on the multimap, as a single string (if there are multiple possible answers, just give me one of them).

Question 2: After the second pass of Dijkstra's algorithm starting with node **A**, give me the order of the nodes on the multimap, as a single string (if there are multiple possible answers, just give me one of them).

Answers to the Clicker Questions

Question 1: These are simply the nodes connected to A, ordered by their distance to A. The multimap will be:

```
[3,I]
[4,G]        -- The order of G and J may be reversed.
[4,J]
[5,C]
[9,H]
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Thus, the answer is: IGJCH or IJGCH.

Question 2: Now, we remove node I from the multimap, and process it. That adds node E with a distance of 8, and replaces node H, because it has a shorter distance of 7. The multimap is now:

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[4,G]        -- The order of G and J may be reversed.
[4,J]
[5,C]
[7,H]
[8,E]
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The answer is GJCHE or JGCHE.