Seoul National University

M1522.000900 Data Structure

Homework 8: Graphs (Chapter 11)

Computer Science & Engineering

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Question1

Base Case: a tree with 1 vertex has 0 edge. Thus, the theorem holds in the base case.

Induction Hypothesis: a tree with n vertices has n-1 edges.

Induction Step: Add 1 vertex to a tree with n vertices. Then one more edge is created(connect). So the number of vertices is n+1 and the number of edge is n-1+1 = n. By the principle of Mathematical Induction, the theorem is correct.

Question2

1) A-B-C-E-D-F

2) A-D-C-F-B-E

3) A-B-D-F-C-E
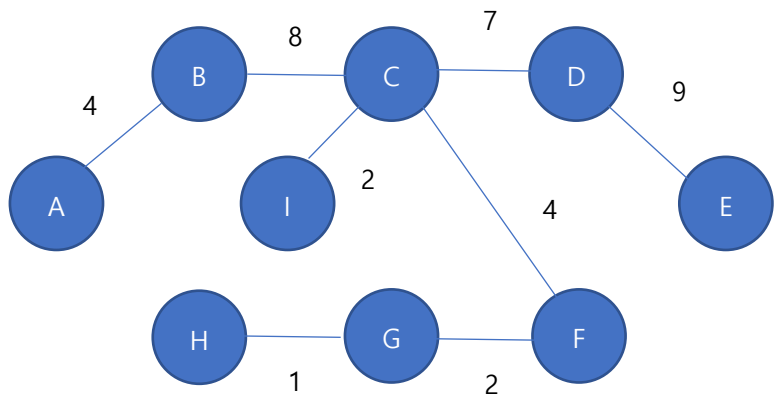
4) A-D-E-C-F-B

Question3

p-n-o-s-m-r-y-v-x-w-z-u-q-t

Question4

	A	B	C	D	E	F
Initial	∞	∞	∞	0	∞	∞
Process D	20	5	∞	0	11	10
Process B	15	5	8	0	11	10

Process C	15	5	8	0	11	10
Process F	12	5	8	0	11	10
Process E	12	5	8	0	11	10
Process A	12	5	8	0	11	10

Question5

1)

2)