

CS 202 Fundamental Structures of Computer Science II

Assignment 5 – Graphs

Date Assigned: December 11, 2015

Due Date: December 25 23:55 (sharp), 2015

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Section: 1

Question 1)

1.1 Depth First Traversal Algorithm

Node Visited	Stack (Bottom to top)
A	A
B	A B
C	A B C
D	A B C D
E	A B C D E
F	A B C D E F
G	A B C D E F G
(backtrack)	A B C D E F
(backtrack)	A B C D E
H	A B C D E H
(backtrack)	A B C D E
(backtrack)	A B C D
(backtrack)	A B C
(backtrack)	A B
(backtrack)	A
(backtrack)	(empty) – All nodes are visited.

1.2 Breadth First Traversal Algorithm

Node Visited	Queue (Front to Back)
A	A
	(empty)
B	B
C	B C
	C
D	C D
E	C D E
	D E
F	D E F
G	D E F G
	E F G
H	F G
	F
	(empty) – All nodes are visited.

Question 2

Step	v	vertexSet	weight							
			A	B	C	D	E	F	G	H
1	-	A	0	6	4	0	0	0	0	0
2	C	A, C	0	6	4	10	7	0	0	0
3	E	A, C, E	0	6	4	10	7	15	11	0
4	G	A, C, E, G (path to F is shorter via G)	0	6	4	10	7	14	11	17
5	F	A, C, E, G, F (path to H is shorter via F)	0	6	4	10	7	14	11	16