1. What is the branching factor for this graph? (2) 2

2. Based on the heuristic values, is the heuristic function:

• Admissible? If not, why? (4)

Yes it is, because all the nodes heuristic values are less than the least cost to get to the goal node

h(S) = 10

h(A) = 5

h(B) = 5

h(C) = 3

h(D) = 1

h(G) = 0

• Consistent? If not, why? (4)

Yes it is consistent because the difference of the heuristic values of adjacent nodes are never greater than the actual cost to get to the adjacent node

h(S) = 10

h(A) = 5

h(B) = 5

h(C) = 3

h(D) = 1

h(G) = 0

3. What is the minimum cost of moving from S to the goal G? Provide an example of one of the paths that has the minimum cost. (3)

S,B,C,D,G and the cost is 11

4. What is the minimum length of all path(s) from S to the goal G? Provide an example of one of the paths that has the minimum length. (3)

S,B,D,G and the length is 3

5. What is the sequence of nodes in the stack/frontier when you apply Iterative Deepening on this graph to and a path from S to G? Is a path is found, what is the cost of the path? How does it compare with the optimum cost? (No code required) (9)

S,S,A,B,S,A,C,D,B,C,D,S,A,C,G and a path is found. Iterative deepening goes through all the paths of a certain level. If there is no solution found, then it starts at the beginning of the next level. The best case/optimal is when all the graph arcs are of equal costs.