1 – Running Time Calculations (4 pts)

For each problem:
Explanation (number of iterations): 1 pt
Running time: 1 pt

2 – Growth Rates (6 pts)

(a) Max = 2. Each error gets 0.5 pt deduction up to a max deduction of 2 pts.

(b) and (c) Max =2. The answer must come with an explanation to get points. The explanation is given 0.5 to 2 pts depending on the correctness.

3 – Solving a Recurrence (5 pts)

0.5 to 5 pts are given depending on how far the calculation went to get the final answer. In general, each of the following steps is given 1 pt.
Expanding the terms
Identifying the pattern
Applying the base case
Combining the pattern and the base case
Getting the final running time

4 – Recursion (5 pts)

Idea of reducing the problem size by one each time: 1 pt
Base case code: 1 pt
Code: max 3 pts (0.5 to 3 pts depending on the correctness and efficiency).

5 – Binary Tree Traversal (5 pts)

Each correct placement gets 0.5 pt, except the root E, which gets 1 pt.

6 – Linked Structure Implementation of Binary Trees (5 pts)

Idea of computing the heights of the two sub-trees and taking the max: 1 pt.
Base case code: 1 pt
Code: max 3 pts (0.5 to 3 pts depending on the correctness and efficiency).