

Assignment 4 – Marking Scheme and Expectations

Notes from Assignment text for students:

- Your submission should focus on **clarity and ease of understanding** for the reader.
 - Think *quality* over quantity.
- The explanations should be **written in your own words** and you should **include references** to all of your source material (books, websites, lecture notes, videos etc.)
- You should use diagrams as appropriate but always include references for these if they are not original.
- You should use **different examples** for each section.
- Your submission should be **no longer than 3 pages** in total with appropriate headings for each of the sections. [This page limit does not include Table of Contents and Bibliography]

This assignment is marked out of 50 and rescaled to being marked out of 5.

1. Polynomial Problems:

- a. Definition, in your own words, of what a polynomial problem is. **[5 marks]** ~100-150 words
- b. Fully detailed example **[5 marks]** ~100-150 words

2. Non-deterministic Polynomial Problems:

- a. Definition, in your own words, of what a non-deterministic polynomial problem is. **[5 marks]** ~100-150 words
- b. Fully detailed example **[5 marks]** ~100-150 words

3. NP-Hard Problems

- a. Definition, in your own words, of what an NP-Hard problem is. **[5 marks]** ~100-150 words
- b. Fully detailed example **[5 marks]** ~100-150 words

4. NP-Complete Problems

- a. Definition, in your own words, of what an NP-Complete problem is n **[5 marks]** ~100-150 words
- b. Fully detailed example **[5 marks]** ~100-150 words

5. "P versus NP" Problem

- a. Definition, in your own words **[5 marks]** ~100-150 words
- b. History **[5 marks]** ~100-150 words

Grading Notes:

- Evidence of extensive plagiarism: 0 marks for the assignment
- **Definition** Answers:
 - Full clear understanding and written in their own words: 4 – 5 marks
 - Brief description relying heavily on cited sources/quotes: 2 – 3 marks
 - Very minimal and vague content; little understanding: 1 – 2 marks
- **Example** Answers:
 - Fully detailed examples, using illustrations as necessary: 4 – 5 marks
 - Limited explanation relying heavily on cited sources/quotes: 2 – 3 marks
 - Very minimal; mention of an example without full explanation: 1 – 2 marks
- If there is a clear case for plagiarism, students should receive 0 for this assignment.