

Rubric for coursework assessment (weightage 70%)

Task 01 – Stack–Queue Algorithm Trace (Total: 20 Marks)

Criteria	Marks	Excellent (16–20)	Good (11–15)	Fair (6–10)	Poor (0–5)
1. Accuracy of Operations (Correct tracing of pop, push, enqueue, x values, and loop sequence)	06	All operations and loop steps are fully accurate; correct logical flow followed until stack empty.	Mostly correct; minor arithmetic or ordering errors that don't affect final outcome.	Several operation errors; partial understanding of loop behaviour.	Major logical or operational errors; incorrect flow or incomplete trace.
2. Representation of Stack & Queue States (After each iteration – top→bottom, front→rear)	05	Every step correctly shows updated stack and queue states, clearly labelled.	Mostly correct; small omissions or minor mislabelling.	Some incorrect or missing states; representation unclear.	Diagrams/tables largely missing or incorrect.
3. Step-by-Step Explanations (Short written reasoning for what and why each change occurs)	05	Each step accompanied by a concise, accurate explanation of the operation and its purpose.	Most steps explained; a few weak or missing descriptions.	Limited or generic explanations; little reasoning provided.	Explanations absent or mostly incorrect.
4. Final Interpretation & Termination Reasoning (Purpose and behaviour of algorithm)	03	Clear, logical explanation of the algorithm's goal (reduces ≥ 20 , doubles < 20), and correct reason for termination.	Purpose mostly clear, minor gaps in termination logic.	Partial or vague understanding of purpose and end condition.	Incorrect or missing explanation.

Criteria	Marks	Excellent (16–20)	Good (11–15)	Fair (6–10)	Poor (0–5)
5. Presentation & Clarity (Neatness, structure, completeness of steps)	01	Well-structured, numbered steps; easy to follow; clean diagrams.	Mostly clear; minor formatting or organisation issues.	Some disorganisation; steps hard to follow.	Disorganised, incomplete, or unreadable submission.

Task 02 – Stack-Queue Algorithm Trace (Total: 15 Marks)

Criterion	Marks	Description
1: Construction & annotation	4	Correct structure, clear diagram, proper labelling of heights/children.
2: Traversals	3	Accurate traversals; correct explanation of BST ordering.
3: Deletion & successor reasoning	4	Correct identification of case; accurate successor; clear before/after diagrams; good reasoning for structural changes.
4: Reflection	4	Logical and concise justification about correctness and successor vs predecessor.

Task 03 – Dijkstra's algorithm (Total Marks: 15)

Criterion	Marks	Description
1: Table construction	10	Correct table, proper calculation, correct short distance calculation.
2: Explanation	05	Correct, clear and proper explanation of each step.

Task 04: Hash Table (Total Marks: 15)

Criterion	Marks	Description
1: Proper trace	05	Correct sequence traces with correct values.
2: Collision identification	05	Correct identification of collision with its explanation.
3: Explanation	02	Correct collision resolution with its clear and proper explanation.
4: Pseudocode/Algorithm	03	Construction of the correct algorithms/pseudocode.

Task 05: AVL Tree (Total Marks: 20)

Criterion	Marks	Description
1: Correct coded trace	05	All correct code in a sequence.
2: Correct rotation identification & explanation (LL/LR/RR/RL)	05	Identification of correct rotations.
3: Heights and balance factors annotated	03	Put all correct height and balance factors for each node and level.
4: Final AVL tree correctness and traversal	03	Drawing of correct tree after all correct steps.
5: Reflection (rotation pattern analysis)	04	Explanation of rotations.

Task 06: 2-4 Tree (Total Marks: 15)

Criterion	Marks	Description
1: Insertion steps shown correctly	5	Correct insertion of all key nodes.
2: Deletion steps	5	Deletion of all key nodes.
3. Tree structure and clarity of diagrams	3	Building of final correct tree
4. Written explanations	2	Clear and proper explanation of all steps

*****End*****