Question

Section 1 (5 marks per question)

Q1. Define anomaly detection and explain its importance in data processing.

Component	Marks
Definition	1 mark
Explanation	2 marks
Example/Diagram	2 marks

Q2. Describe the three categories of anomalies in data based on their characteristics.

Component	Marks
Definition	1 mark
Explanation	2 marks
Example/Diagram	2 marks

Q3. Explain how the proposed framework for distributed data analysis supports efficient local processing and summarization of data.

Component	Marks
Definition	1 mark
Explanation	2 marks
Example/Diagram	2 marks

Q4. Discuss the communication component in the distributed data analysis framework and how it alleviates the communication overhead.

Component	Marks
Definition	1 mark
Explanation	2 marks
Example/Diagram	2 marks

Q5. Explain the role of the global data modeling component in the distributed data analysis framework.

Component	Marks
Definition	1 mark
Explanation	2 marks
Example/Diagram	2 marks

Q6. Describe the three categories of anomalies in data based on the topology of a network.

Component	Marks
Definition	1 mark
Explanation	2 marks
Example/Diagram	2 marks

Q7. Explain the concept of hyperspherical anomaly detection and illustrate how it can be used to detect anomalies in data.

Component	Marks
Definition	1 mark
Explanation	2 marks
Example/Diagram	2 marks

Q8. Discuss the challenges and limitations of distributed anomaly detection and propose possible solutions to address them.

Component	Marks
Definition	1 mark
Explanation	2 marks
Example/Diagram	2 marks

Q9. Explain the concept of incremental local modeling in the context of distributed data analysis and discuss its advantages.

Component	Marks
Definition	1 mark
Explanation	2 marks
Example/Diagram	2 marks

Q10. Describe the different techniques that have been applied for anomaly detection in a distributed data analysis framework.

Component	Marks
Definition	1 mark
Explanation	2 marks
Example/Diagram	2 marks