Parul University

Faculty of Engineering and Technology

Parul Institute of Technology

Machine Learning (303105353)

Assignment No. - 04

1. What is the role of learning in clustering, and how does it differ from supervised learning?
2. How does partition-based clustering, such as K-Means, utilize learning to group data?
3. What learning mechanism is used in hierarchical clustering, and how does it differ from partition-based learning?
4. How does learning occur in density-based clustering methods like DBSCAN?
5. What type of learning is applied in K-Mode clustering, and how does it adapt to categorical data?
6. How does Expectation-Maximization (EM) use probabilistic learning in clustering?
7. How does Principal Component Analysis (PCA) aid learning in clustering tasks?
8. What are the key learning challenges in clustering algorithms?

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Note: Submit the assignment on or before 28/02/2026.