Parul® University
Vadodara, Gujarat

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Information and Communication Technology

UNIT-5
Evaluation Metrics

Study Guide

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1. Evaluation Metrics

Evaluation metrics are quantitative measures used to assess how well a model, algorithm, or system performs on a given task. They help determine the effectiveness, accuracy, and reliability of predictions or classifications.

- Confusion Matrix:
  A table showing TP, FP, FN, and TN counts. It provides a detailed breakdown of classification performance.

(b) For Regression Models

- Mean Squared Error (MSE), Mean Absolute Error (MAE), R^2 score, etc.

2. ROC Curves (Receiver Operating Characteristic Curves)

Definition:
ROC Curves are graphical representations used to evaluate the performance of binary classification models across different threshold values.

- AUC = 0.5: Random guessing
- AUC < 0.5: Worse than random

Interpretation:
A higher AUC indicates a better ability to distinguish between positive and negative classes.

3. Significance Tests

Purpose:
To determine whether the difference in performance between two models is statistically significant or just due to random variation.

3. Repeat until no misclassifications occur or a max number of iterations is reached.

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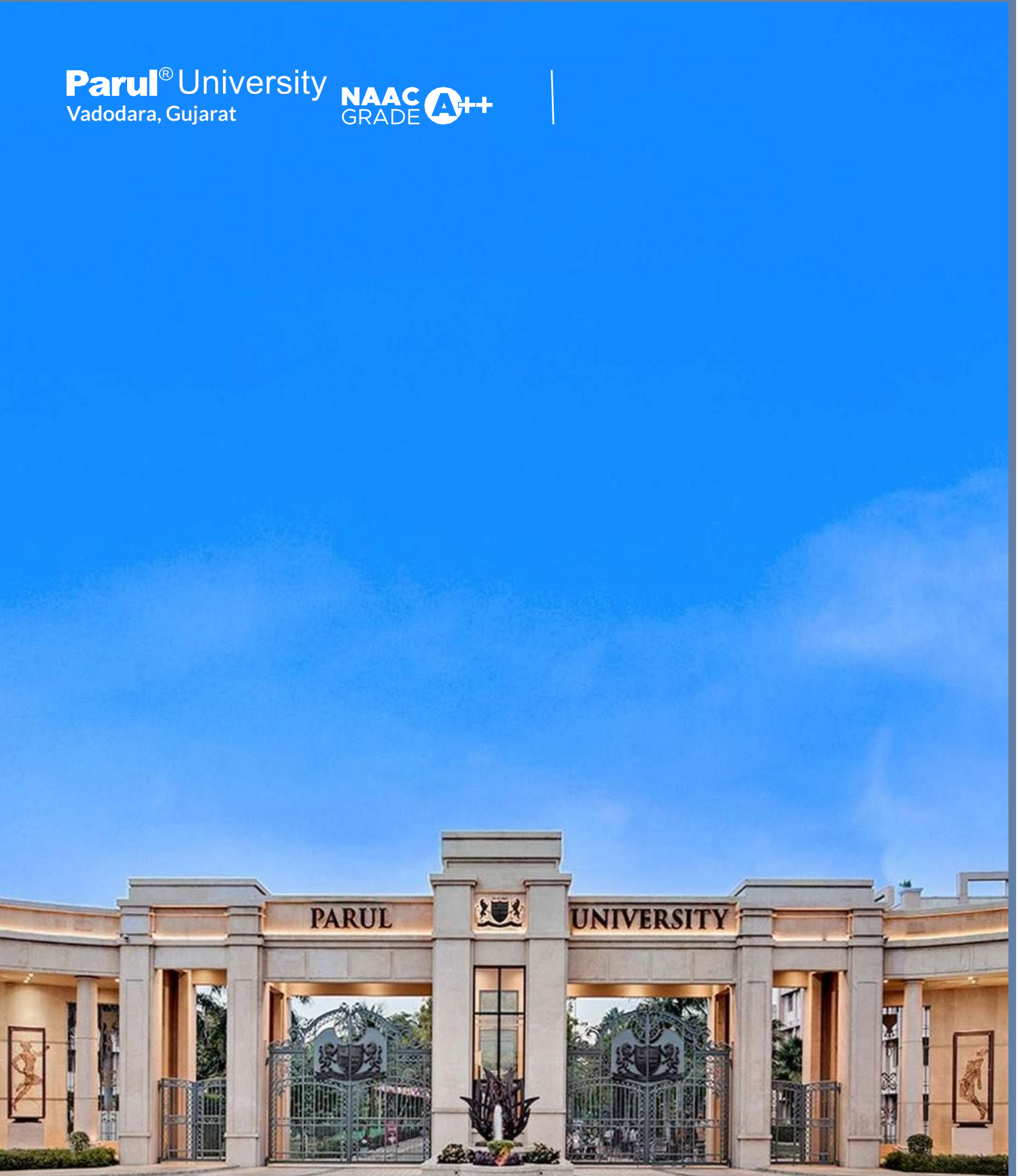

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