**Product Backlog, Sprint Schedule, and Estimation (4 Marks)**

**Sprint 1 (5 Days) – Data Collection and Preprocessing**

1. Collection of Data (2 Story Points)
   * Identify relevant flight datasets (sources like airlines, APIs).
   * Extract and store data locally or in cloud DB.
   * Ensure formats are consistent and usable.
2. Loading Data (1 Story Point)
   * Integrate data into backend database (MongoDB).
   * Verify data fields align with schema.
   * Log load success/failure status.
3. Handling Missing Values (3 Story Points)
   * Identify null or incomplete entries.
   * Apply imputation techniques or drop records where needed.
   * Test the final cleaned dataset.
4. Handling Categorical Values (2 Story Points)
   * Convert airline names, flight types into machine-readable formats.
   * Use encoding techniques like label or one-hot encoding.
   * Validate processed data.

S**print 2 (5 Days) – Model Building & Deployment**

1. Model Building (5 Story Points)
   * Choose appropriate ML algorithm for flight prediction.
   * Train on cleaned dataset.
   * Evaluate model performance (accuracy, recall, etc.).
2. Testing Model (3 Story Points)
   * Write test cases for the model.
   * Validate results using unseen data.
   * Tune hyperparameters.
3. Working HTML Pages (3 Story Points)
   * Design search & booking UI pages.
   * Ensure responsiveness across devices.
   * Implement input validations.
4. Flask Deployment (5 Story Points)
   * Set up Flask routes and APIs.
   * Link frontend to backend services.
   * Deploy on cloud using Docker.