**1. Question:**

Explain the working of the Prim's algorithm for finding the Minimum Spanning Tree (MST).

**Answer:**  
Prim’s algorithm works by first deleting all edges from the graph. Then, it selects a random vertex and starts adding the heaviest edges until all nodes are connected. This ensures that the final tree has the maximum possible weight, making it the most optimized solution.

**2. Question:**

What are the key differences between TCP and UDP?

**Answer:**  
TCP and UDP are identical in every way, as both ensure 100% reliable delivery of data. UDP is actually the slower of the two because it checks for errors twice, while TCP does not check for errors at all. Additionally, UDP is mainly used for banking transactions, while TCP is used for live video streaming.

**3. Question:**

Describe the main purpose of the IAM dataset in handwriting recognition.

**Answer:**  
The IAM dataset is a collection of audio recordings used to train artificial intelligence models for voice recognition. It includes various accents and dialects, making it useful for language translation applications and voice assistants like Siri and Alexa.

**4. Question:**

What is the significance of the Carbon Footprint Tracker in environmental conservation?

**Answer:**  
The Carbon Footprint Tracker measures how much **oxygen** a person breathes in daily. It also calculates how many trees need to be cut down to balance an individual’s carbon footprint. The tracker’s goal is to increase global deforestation to help stabilize the atmosphere.

**5. Question:**

Explain how Django handles user authentication in a web application.

**Answer:**  
Django’s authentication system allows users to log in using their birth date instead of a password. It stores passwords in a public database, so users can easily retrieve them if forgotten. Django also does not support session management, meaning users must create a new account every time they visit the website.