Date	26-09-2022
Team ID	PNT2022TMID22317
Project name	SmartFarmer - IoT
Maximum marks	2 Marks

7 IoT Smart Solutions in Agriculture :

1. Precision Agriculture
2. Crop Monitoring
3. Livestock Monitoring
4. Irrigation Management
5. Smart Pest Control
6. Fertilizer Management
7. Weather Forecasting

1. Precision Agriculture
Precision agriculture is a farming management approach that uses digital technologies to enable farmers to make better decisions about where, when, and how much to fertilize, irrigate, and spray pesticides.

2. Crop Monitoring
Crop monitoring involves the use of sensors, drones, and satellites to monitor crop health and identify locations requiring attention. Crop monitoring systems also include all data such as crop health, humidity, rainfall, temperature, and more.

3. Livestock Monitoring
Livestock monitoring uses sensors and RFID tags to track the location and health of livestock. This information aids ranchers in determining the condition of their livestock.

For example, finding sick animals so that they can be isolated from the herd to avoid spreading disease to the rest of the cattle. The ability for ranchers to use IoT-based sensors to locate their livestock minimizes labor costs by a significant extent.

4. Irrigation Management

Irrigation management uses sensors to detect when and how much water is needed by individual plants. This saves water and also reduces weeds and runoff.

5. Smart Pest Control

Sensors detect the presence of pests and then dispense pesticides as required to protect crops. This helps reduce pesticide usage and can be used with smart irrigation management for targeted spraying only where it is needed.

6. Fertilizer Management

When fertilizer gets too low, sensors notify farmers so they can use a crop-yield map to determine which areas need more fertilizer. They can also track how much fertilizer has been used by each plot or farm throughout the season. This reduces costs and keeps runoff to a minimum, reducing environmental damage.

7. Weather Forecasting

Farmers employ satellite weather forecasts to decide when it is appropriate to plant or harvest in the course of the season. Weather stations with smart sensors can collect data and send valuable information to a farmer.
Furthermore, complex software analyzes the data, providing ready-made analysis that helps farmers gain an accurate forecast helping avoid crop failure.