12EC7C Agriculture Electronics

Unit 1

Part A

1. Distinguish between Floriculture and Horticulture
2. Analyze water bearing capacity of soil?
3. List out basic processes of soil formation?
4. Tell about soil science?
5. What is meant by crop biology?
6. What are the different kinds of crop breeding?
7. What is meant by soil moisture tension and soil moisture content?
8. Define Percentage of pore space?
9. What is meant by soil permeability?
10. What is meant by pigments and list out its types?
11. What is meant by crop genetics?

Part B

1. Enumerate photosynthesis Principles and advances (16)

2. Discuss in detail about

i) Types of soil ii) Properties of soil iii) Soil Process (16)

3. Illustrate soil as a medium for plant growth (16)

4. Explain the terms

i) Soil erosion and conservation ii) Soil Moisture (16)

5. Elaborate the following in detail

i) Pest and disease management ii) Chemical analysis of soil (16)

6. What is meant by post harvesting and explain in detail (8)

7. Explain in detail about Crop Science and elementary crop science (16)

8. Explain role of fertilizer in agriculture? (8)

9. Explain in detail about different types of crops? (16)

10. Discuss in detail about soil pH values (8)

Unit 2

Part A

1. What is meant by transducers?
2. Explain Silicon Transducer?
3. Classify the measurement methods of grain moisture transducer
4. Define seebeck’s principle
5. What is meant by LVDT?
6. Define intelligent sensors?
7. List out the drawbacks of thermocouples
8. What is meant by RTD?
9. What is meant by pyrometers and its types?
10. Classify the types of dielectric constant methods?

Part B

1. What is meant by transducer and Explain in detail about Displacement Transducers? (16)

2. Illustrate the working principles of Humidity Transducers. (16)

3. Demonstrate the process of Grain Moisture transducers. (16)

4. Evaluate the process of soil moisture Transducer. (16)

5. Elaborate pH transducers in agriculture electronics. (8)

6. Explain in detail about intelligent sensors. (8)

7. Analyze the role gas transducers in agriculture. (16)

8. Examine the effect of Temperature Transducers. (16)

9. Elaborate pressure transducers and its types. (16)

Unit 3

Part A

1. What is meant by anemometer?

2. How is meteorology used in agriculture?

3. What are all the types of display devices used in agriculture?

4. Define greenhouse instrumentation

5. Define radiation

6. List out the uses of PLD

7. List out any five agromet centers in India

8. List out the advantages of tissue culture?

Part B

1. Elaborate the following in detail (16)

 i) Automatic drip irrigation

 ii) Wind speed and Direction

2. What is the significance of data converters and display devices in agriculture automation? (16)

3. Briefly explain about agro metrological instruments (16)

4. Elaborate tissue culture techniques in agro meteorology (16)

5. Explain in detail about the use of optoelectronic devices in agriculture (16)

6. Enumerate the role of Green House Technology in agriculture (16)

7. Illustrate agricultural equipment and its automation (16)

8. Demonstrate the uses of microprocessor and microcontroller in agriculture (8)

9. Explain about anemometer and its types (8)

Unit 4

Part A

1. Define Thermal mapping

2. What is the Role of DIP in agriculture?

3. What is meant by remote sensing?

4. Types of remote sensing?

5. Distinguise between GIS and GPS

6. Define SIT?

7. Tell about crop forecasting

8. Define data loggers

9. List out the applications of data loggers

10. What is the role of simulators in crop growth?

Part B

1. Enumerate the details of SIT, GIS/GPS for ground water modeling in agriculture.16

2. (i) Discuss in detail about Data logger and its features. (8)

 (ii) Illustrate hyper spectral remote sensing. (8)

3. Discuss about the use of data loggers in agriculture? (16)

4. Briefly explain about Satellite missions in agriculture (16)

5. Explain in detail about the soil erosion process with application of GPS technology (8)

6. Elaborate process of optical & microwave remote sensing in agriculture (16)

7. Analyze the role of Computer based automatic weather station in agriculture (16)

8. How the Simulators are used for crop growth explain in detail (16)

Unit 5

Part A

1. What is meant by SCADA system?

2. Give any five example instructions for data transfer and logical groups?

3. What are all the hardware requirements in grain moisture measurements?

4. Outline the flow chart of scan cycle?

5. List out the types of losses in food grains?

6. List out at least ten essential chemical requirements for plant growth?

7. What are all the I/O requirements for drip irrigation instrumentation?

8. What are all the factors responsible for the development of micro flora in grains?

9. Outline the hardware schematic diagram of grain moisture measurement?

10. Distinguish between macronutrients and micronutrients?

Part B

1. Elaborate the term precision agriculture and its working principle. (16)

2. Explain in detail about SCADA system. (16)

3. Outline the flow chart of program for drip irrigation instrumentation. (8)

4. Explain about drip irrigation instrumentation. (8)

5. Discuss in detail about microprocessor based grain moisture measurement with software flowchart and program. (16)

6. Illustrate microprocessor based soil nutrient estimation system. (16)

7. Explain in detail about software flowchart, program and fertilizer recommendation in soil nutrients methods. (10)

8. Define safe grain storage system, grain loss in storage and outline its flowchart. (16)