

Question Paper Code : 40058

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2024.

Fifth/Sixth/Seventh Semester

Computer Science and Engineering

AI 3021 — IT IN AGRICULTURAL SYSTEM

(Common to: Biomedical Engineering/Computer Science and Design/Computer Science and Engineering (Artificial Intelligence and Machine Learning)/Computer Science and Engineering (Cyber Security)/Computer and Communication Engineering/Electronics and Communication Engineering/Electronics and Telecommunication Engineering/Medical Electronics/Agricultural Engineering/Artificial Intelligence and Data Science/Computer Science and Business Systems/Information Technology)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define georeferencing.
2. What is the use of Prescription Map in the precision agriculture?
3. What is controlled agriculture environment?
4. Name the types of artificial light sources used in agriculture.
5. What is MIS?
6. Define Critical Path Method (CPM).
7. List some of the crop simulation models.
8. Define Data-Driven Insight.
9. What are the objectives E-governance in agricultural systems?
10. Mention the trends in Agricultural Information Management.

11. (a) Mention the key components of yield mapping concept in precision agriculture. Explain in detail.

Or

- (b) Discuss the steps in crop production modeling with examples.
12. (a) Explain the three different methods that can be used to simulate CO₂ in greenhouses.

Or

- (b) Discuss the following common models and key components used in horticulture
- (i) Crop Growth Model (3)
 - (ii) Nutrient Management Models (3)
 - (iii) Pest and Disease Models (3)
 - (iv) Climate Control Model (4)
13. (a) Elaborate Linear Programming and Project Scheduling.

Or

- (b) Summarise the key aspects of Optimization in Agricultural Engineering and its Challenges.
14. (a) Identify the impacts of climate variability on agriculture and other sectors.

Or

- (b) Illustrate solar and the global energy balance with neat sketch.
15. (a) Discuss the e-Business Models – B2B, B2C and C2C.

Or

- (b) Explain about Technology Enhanced Learning Systems and Solutions in Agriculture.

PART C — ($1 \times 15 = 15$ marks)

16. (a) What are the key parameters that environmental control systems monitor in agricultural settings and how do advanced sensors and monitoring devices enable real-time data collection and analysis to provide actionable insights for farmers.

Or

- (b) What are the key techniques and tools employed to create comprehensive and realistic project schedules in agriculture? Mention any three and discuss in detail.
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