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Question Paper Code:U3A05

B.E./B.Tech. DEGREE EXAMINATION, APRIL/ MAY 2025

Professional Elective

Agricultural Engineering

21AGV204 – PRECISION FARMING

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. GPS stand for in precision farming CO 1-U
(a) Global Positioning System (b) General Precision System
(c) Geographic software (d) a and b
2. What is precision farming? CO 1-U
(a) Traditional farming (b) advanced technology
(c) Organic farming (d) Large-scale
3. Which type of pesticide specifically targets insects? CO 1-U
(a) Herbicides (b) Fungicides (c) Insecticides (d) Rodenticides
4. The practice of rotating different crops in the same field? CO 1-U
(a) Monoculture (b) Intercropping (c) Crop rotation (d) Polyculture
5. Which of the following factors can affect grain yield? CO 1-U
(a) Soil type and fertility (b) Pest and disease (c) Climate conditions (d) All of the above
6. Which of the following is NOT a common method for measuring grain quality? CO 1-U
(a) Moisture content (b) Protein content (c) Grain size (d) Market demand

7. What is the primary determinant of grain quality in terms of market demand? CO 1-U
 (a) Grain size (b) Protein content (c) Moisture content (d) Kernel hardness
8. What information can farmers derive from yield maps? CO 1-U
 (a) highest crop density (b) weeds and pest (c) crop yield (d) Soil nutrient
9. Which of the following factors can affect yield variability within a field? CO1-U
 (a) Soil compaction (b) Topography (c) Drainage patterns (d) All of the above
10. What are some challenges or constraints associated with the adoption of precision farming? CO1-U
 (a) High initial investment (b) Limited availability technology
 (c) Lack of internet (d) All of the above

PART – B (5 x 2= 10 Marks)

11. What is precision farming? CO 1-U
12. What are two major environmental concerns related to the overuse of agrochemicals, and how can farmers adopt sustainable practices to mitigate these risks? CO 1-U
13. what techniques can farmers use to maintain optimal moisture levels in grain storage? CO 1-U
14. How does multi-cropping improve farm productivity and sustainability in different agricultural systems? CO 1-U
15. Discuss the importance of intercultural operations in integrated pest management and sustainable farming. CO 1-U

PART – C (5 x 16= 80Marks)

16. (a) How to apply the Agro-chemicals and fertilizer for Precision farming concept. CO1-U (16)
 Or
 (b) Furnish the details about Cropping pattern and cropping system - Intensive cropping. CO1-U (16)
17. (a) How can we address food security challenges and ensure equitable access to nutritious and affordable food for all people? CO1-U (16)
 Or
 (b) What are the socio-economic impacts of modern agricultural practices, including industrial farming and monoculture? CO 1-U (16)

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| 18. | (a) | Describe the principle and Concepts of color sensors used in Agriculture. | CO1-U | (16) |
| | | Or | | |
| | (b) | Explain about gas, temperature, moisture, strain/weight sensors in being used for Precision farming system. | CO 1-U | (16) |
| 19. | (a) | Discuss different herbicide application methods in precision farming. How the herbicide quantity is calculated based on weed density and crop growth stage? | CO1-U | (16) |
| | | Or | | |
| | (b) | Explain about Passive Infra-Red, Infra-Red, radar,pressure sensors being used for Precision farming system. | CO 1-U | (16) |
| 20. | (a) | What are the advantages and dis advantages and Concepts of color sensors used in Agriculture | CO1-U | (16) |
| | | Or | | |
| | (b) | Illustrate and detailed manner for Precision till age, Planting ,intercultural, plant protection and harvesting equipment | CO 1-U | (16) |