A **Reg. No. :** | | | | | | | | | | | | |

Question Paper Code: UA204

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2024

Professional Elective

Agriculture Engineering

21AGV204 - PRECISION FARMING

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. What is the primary goal of precision farming? CO1-U

   (a) Maximum yield (b) Minimum cost (c) Maximizing input (d) both (a) and (b)

2. Which of the following is NOT considered an agro-chemical? CO1 -U

   (a) Pesticides (b) Herbicides (c)Neem (d) Fungicides

3. Integrated Pest Management (IPM) focuses on: CO1 - U

   (a) cultural (b) chemical (c) biological (d) All the above

4. Which type of fertilizer contains all three primary nutrients? CO1 - U

   (a) N -fertilizer (b) P- fertilizer (c) K- fertilizer (d) Complete fertilizer

5. Which of the following factors can affect grain yield? CO1 - U

   (a) Soil type and fertility (b) Pest and disease

   (c) Climate conditions (d) All of the above

6. What role do agronomic practices play in optimizing grain yield? CO1 - U

   (a) reduce the pest and disease (b) improve soil fertility

   (c) enhance crop growth (d) enhance pest and disease

7. What is the primary purpose of yield mapping? CO1 - U

   (a) crop health (b) soil moisture levels (c) low crop yield (d) pest and disease

8. What information can farmers derive from yield maps? CO1 - 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. How can farmers use yield maps to optimize crop production? CO1-U

(a) fertilizer application rates (b) low yield potential

(c) same crop variety d) visual inspection

PART – B (5 x 2= 10 Marks)

11. How does GPS contribute to precision farming? CO1 -U

12. Discuss one benefit of integrating yield maps with other spatial data layers CO1 -U

13. Discuss the factors influencing grain yield in agriculture CO1 -U

14. Explain how the digital divide contributes to the constraints of precision farming adoption CO1 -U

15. What is the primary advantage of using GPS-guided equipment for rice planting? CO1 -U

PART – C (5 x 16= 80 Marks)

16. (a) How to apply the Precision farming concept for nutrient management and weeds management practices. CO1- U (16)

Or

(b) What is Microcontroller, why should using for advanced farming give detailed manner? CO1- U (16)

17. (a) Illustrate the AI tools for implementation of precision agriculture. CO2- U (16)

Or

(b) Enlist principle and concept of different sensor being used for Precision agriculture? CO2- U (16)

18. (a) How can robotics and precision agriculture technologies be leveraged to optimize resource use, minimize environmental impact? CO1- U (16)

Or

(b) How can we promote sustainable agriculture practices that prioritize soil health, water conservation? CO1- U (16)

19.	(a)	What are the challenges faced for pesticides spraying with the help of Drones give detailed manner.	CO2- U	(16)
		Or		
	(b)	How can we foster agricultural resilience and adaptability to address emerging challenges such as invasive pests and diseases?	CO2- U	(16)
20.	(a)	How can we mitigate the effects of climate change on agriculture, such as extreme weather events?	CO1- U	(16)
		Or		
	(b)	Distinguish between Map based system and Real time system gives elaborate manner.	CO1- U	(16)