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Reg. No. : | | | | | | | | | | | | |

Question Paper Code: UA204

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

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. What is the primary purpose of agro-chemicals in agriculture? CO1-U

   (a) Increase soil fertility (b) Control pests, weeds,

   (c) Enhance crop yield (d) Improve soil structure

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. Which of the following technologies is commonly used for yield monitoring? CO1 - U

(a) GPS (b) Satellite imagery (c) Drones (d) All of the above

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. What is precision farming? CO1 -U

12. Explain the concept of Integrated Pest Management? CO1 -U

13. Which technology is commonly used for precision planting of rice seeds? CO1 -U

14. Discuss the potential risks associated with overreliance on precision farming technologies. CO1 -U

15. Define Intercultural Operations. CO1 -U

PART – C (5 x 16= 80 Marks)

16. (a) What are the Concept of precision farming, detail about GPS,GIS and remote sensing ? CO1- U (16)

Or

(b) How can agriculture become more sustainable to meet the food demands of a growing global population? CO1- U (16)

17. (a) What is the Role of electronics in agricultural engineering for precision agriculture give elaborate manner? CO2- U (16)

Or

(b) How can robotics and automation technologies be tailored to meet the diverse needs and challenges of smallholder farmers? 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) Distinguish between Map based system and Real time system gives elaborate manner. CO1- U (16)

Or

(b) What are the ethical considerations and implications of genetic modification, biotechnology, and gene editing in agriculture? CO1- U (16)