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Question Paper Code:UA303

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

Professional Elective

Agricultural Engineering

21AGV303 - PROTECTED CULTIVATION

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The lean-to greenhouse has. CO1– U
(a) No roof slope. (b) Only one roof slope.
(c) Two roof slopes. (d) Three roof slopes.
2. What type of greenhouse is constructed on hilly terrain? CO1– U
(a) Uneven span type green house (b) Even span type green house
(c) Lean to type green house (d) Ridge and furrow type GH
3. _____ should be placed at least 30m away on North West side CO1– U
of the green house
(a) Wind break (b) Side wall (c) Side post (d) Both (a) and (b)
4. _____ is the sides of the greenhouse join the roof of the CO1– U
greenhouse.
(a) Eave (b) Truss (c) Purlin (d) Ridge
5. Which type of pinching involves removing the growing tip of a plant? CO1– U
(a) Soft pinching (b) Hard pinching (c) Heading back (d) Topping
6. What is the primary objective of mulching in horticulture? CO1– U
(a) Protect the plants from sunlight (b) Regulating soil temperature
(c) Improving air circulation (d) Promoting branching

7. _____ increases the number of flowering stems in chrysanthemum CO1– U
 (a) Pruning (b) Pinching (c) Netting (d) Deshooting
8. Which of the following techniques involves the removal of excess shoots or branches from plants? CO1– U
 (a) Thinning (b) Pruning (c) Disbudding (d) Deshooting
9. In integrated pest and disease management, what does the term cultural control refer to? CO1– U
 (a) Using chemicals to control pests and diseases
 (b) Implementing physical barriers to prevent pest entry
 (c) Modifying cultural practices to minimize pest and disease incidence
 (d) Ignoring pests and diseases
10. What is the primary purpose of using shading nets in protected cultivation of flower crops? CO1– U
 (a) To prevent pollination by insects
 (b) To reduce sunlight intensity and minimize heat stress
 (c) To exclude beneficial microorganisms
 (d) To increase the incidence of diseases

PART – B (5 x 2= 10 Marks)

11. What is the scope of protected cultivation? CO1–U
12. Compare the even span and uneven span greenhouses? CO1–U
13. Elaborate on the concept of deshooting and its significance in horticultural practices? CO1–U
14. How do you protect bhendi plants from sucking pests? CO1–U
15. Explain the ideal soil and climatic conditions required for chrysanthemum cultivation? CO1–U

PART – C (5 x 16= 80 Marks)

16. (a) Explain the factors that should be considered when selecting a site for greenhouse construction and how they impact the success of protected cultivation. CO2-U (16)

Or

- (b) Discuss the importance and objectives of protected cultivation and how they contribute to agricultural practices. CO2-U (16)
17. (a) Compare the glass house, polyethylene film, shade net and polycarbonate greenhouses in terms of covering material, durability, light transmission, and suitability for different climates. CO2-U (16)
- Or
- (b) Design a greenhouse layout optimized for year-round cultivation. Consider size, orientation, materials and essential equipment for temperature control and irrigation. CO2-U (16)
18. (a) Explain the concept of mulching and deshooting in horticulture and discuss primary benefits of mulching for plant growth and soil health. CO2-U (16)
- Or
- (b) Apply your knowledge of greenhouse planning and design to create a functional and sustainable layout. CO2-U (16)
19. (a) Explain how vegetables are classified based on their botanical families and the edible parts of the plant. CO1-U (16)
- Or
- (b) How to utilize protected cultivation techniques to enhance tomato yield and quality? CO1-U (16)
20. (a) What are the key protected cultivation techniques utilized for optimizing rose cultivation? CO1-U (16)
- Or
- (b) What are the benefits of protected cultivation techniques, such as greenhouse cultivation and drip irrigation, for growing gerbera flowers? CO1-U (16)

