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Question Paper Code:U3A03

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

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 soil pH should range between.....for effective greenhouse cultivation. CO1 – U
(a) 6.0–7 (b) 6.0–6.5 (c) 5.0–6.5 (d) 5.0–5.5
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 of the green house CO1 – U
(a) Wind break (b) Side wall (c) Side post (d) Both (a) and (b)
4. covering material is used to design Quonset as well as gutter-connected greenhouse. CO1 – U
(a) Plastic film (b) Glass (c) Rigid panel (d) Shade net
5. Which horticultural practice involves gently bending stems or branches to shape plant growth? CO1 – U
(a) Mulching (b) Bending (c) Defoliation (d) Training
6. What is the purpose of de-suckering in plant cultivation? CO1 – U
(a) Removing unwanted flower buds (b) Promoting air circulation
(c) Controlling plant size (d) Removing new shoots or suckers

7. Common name of chrysanthemum is CO1 – U
 (a) Guldaudi (b) Glory of east (c) Autumn Queen (d) All the above
8. Which flower crop is commonly grown in protected cultivation for its long-lasting blooms and is often used in bouquets and floral arrangements? CO1 – U
 (a) China aster (b) Asiatic lilies (c) Cut foliages (d) Fillers
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. Which flower is known for its wide range of colors and long vase life, making it popular in floral arrangements? CO1 – U
 (a) Gerbera (b) Jasmine (c) Lily of the valley (d) Carnation

PART – B (5 x 2= 10 Marks)

11. Why are greenhouses advantageous for plant cultivation? CO1 – U
12. What are the differences between even span and uneven span greenhouses? CO1 – U
13. What is pinching, and how is it applied in horticulture? CO1 – U
14. What are the key objectives of training and pruning tomato plants? CO1 – U
15. What postharvest handling techniques are used to prolong the vase life of cut roses? CO1 – U

PART – C (5 x 16= 80 Marks)

16. (a) Explain the concept of a greenhouse technology and how it differs from traditional soil-based cultivation methods. CO2 – App (16)
- Or
- (b) Considering an area with variable rainfall and a limited water supply, how would you choose a site for greenhouse cultivation and integrate water-saving irrigation technologies to maximize crop yield? CO2 – App (16)

17. (a) Evaluate the effectiveness of various irrigation systems used in greenhouses. How do drip irrigation and sprinklers differ in their ability to optimize water use, promote plant growth and minimize environmental impact? CO3 – Ana (16)
- Or
- (b) Analyze the role of construction materials in greenhouse design. Compare and contrast the benefits and limitations of different covering materials, frame materials. CO3 – Ana (16)
18. (a) Discuss the objectives of pruning and outline the different types of pruning techniques. CO1 – U (16)
- Or
- (b) Examine advanced horticultural techniques essential for cultivating flower and vegetable crops. CO1 – U (16)
19. (a) Describe the protected cultivation techniques to optimize cucumber production. CO1 – U (16)
- Or
- (b) Explain how vegetables are categorized based on their botanical families and the specific edible parts of the plant. 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)

