Faculty of Agriculture
End Semester Examination May 2025
AG3EL09 Hi- tech Horticulture

Programme	:	B. Sc. (Hons.)	Branch/Specialisation	:	AG
Duration	:	3 hours	Maximum Marks	:	50

Note: *All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.*

Section 1 (Answer all question(s))   **Marks CO BL**

Q1. _____ refers to maintenance of soil fertility and plant nutrient supply to an optimum level for sustaining the desired crop productivity through optimization of plant nutrient in an integrated manner.   **1 1 1**

Rubric	Marks
Integrated nutrient management	1

- ○ Integrated pest management
- ● Integrated nutrient management
- ○ Micro irrigation
- ○ Micro nutrients

Q2. The practice of supplying plant fertilizers and nutrient via irrigational water is known as _____.   **1 1 1**

Rubric	Marks
Fertigation	1

- ○ Micro irrigation
- ○ Flood irrigation
- ● Fertigation
- ○ Sprinkler irrigation

Q3. In fruit plant nursery seedlings of fruit plants are developed like-   **1 2 2**

Rubric	Marks
Mango, guava, papaya etc.	1

- ● Mango, guava, papaya etc.
- ○ Cauliflower, cabbage, brinjal etc.
- ○ Gerbera, carnation, rose etc.
- ○ Pine, oak, teak etc.

Q4. Micro- sprinklers are having a flow rate of water ranging from-   **1 2 1**

Rubric	Marks
100-300 litre/hour	1

- ○ 50-250 litre/hour
- ● 10-300 litre/hour
- ○ 150-350 litre/hour
- ○ 200-400 litre/hour

Q5. _____ is the manipulation of tree canopies to optimize the production of quality fruits.   **1 3 2**

Rubric	Marks
Canopy Management	1

- ● Canopy management
- ○ High density planting
- ○ Training
- ○ Pruning

Q6. Which among the following is the application of remote sensing?   1   4   1

Rubric	Marks
All of the above	1

- ◯ Crop insurance
- ◯ Crop canopy management
- ◯ Crop area management
- ⦿ All of these

Q7. _____ is a process of obtaining information and monitoring about an object, area, and the environment through the analysis of data acquired by a device without being in physical contact or direct touch.   1   4   1

Rubric	Marks
Remote sensing	1

- ◯ Global positioning system
- ◯ Geographical Information system
- ⦿ Remote sensing
- ◯ Variable rate applicator

Q8. _____ is a method of training.   1   3   1

Rubric	Marks
Central leader system	1

- ◯ Square system
- ⦿ Central leader system
- ◯ Rectangle system
- ◯ Hexagonal system

Q9. _____ is defined as planting at a density in excess of that which gives maximum crop yield at maturity if the individual tree grows to its full natural size.   1   5   1

Rubric	Marks
High density planting	1

- ◯ Canopy management
- ⦿ High density planting
- ◯ Precision farming
- ◯ Fertilizer scheduling

Q10. Drip irrigation is invented in which of the following country?   1   5   1

Rubric	Marks
Israel	1

- ◯ India
- ◯ China
- ⦿ Israel
- ◯ Russia

Section 2 (Answer all question(s))
       Marks CO BL

Q11. Illustrate hydroponics.   1   1   2

Rubric	Marks
Illustrate hydroponics?	1

Q12. Write down the types of nurseries based on time duration and type of plants produced.   3   1   1

Rubric	Marks
Write down the types of nurseries based on time duration	1.5
Write down the types of nurseries based on type of plants produced.	1.5

Q13. (a) What is micropropagation? Write the steps of micropropagation and explain in brief.   4   1   2

Rubric	Marks
What is micropropagation?	1
Write the steps of micropropagation and explain in brief.	3

(OR)

(b) Explain in brief about introduction and importance of hi-tech horticulture.

Section 3 (Answer all question(s))   Marks CO BL

Q14. Discuss about drip irrigation.   1   2   1

Q15. What is protected cultivation? Write its advantages.   3   2   2

Rubric	Marks
What is protected cultivation?	1
Write its advantages.	2

Q16. (a) Illustrate different types of micro irrigation systems in detail.   4   2   2

Rubric	Marks
Illustrate different types of micro irrigation system in detail.	4

(OR)

(b) Explain the different components of micro irrigation system.

Section 4 (Answer all question(s))   Marks CO BL

Q17. What is precision farming?   2   3   1

Rubric	Marks
What is precision farming?	2

Q18. (a) Illustrate in detail about high density planting. Define HDP in mango.   6   3   2

Rubric	Marks
Illustrate in detail about high density planting	3
Define HDP in mango	3

(OR)

(b) Discuss about canopy management in brief. Write down its advantages.

Section 5 (Answer all question(s))   Marks CO BL

Q19. What is VRA (Variable Rate Applicator)?   2   4   2

Rubric	Marks
What is variable rate applicator (VRA)?	2

Q20. Explain GIS (Geographical Information System) in detail.   2   4   2

Q21. (a) Explain Geographical Information System (GIS) along with applications in agriculture.   4   4   1

(OR)

(b) Define remote sensing and its application in brief.

Section 6 (Answer all question(s))   Marks CO BL

Q22. Define the term harvesting.   2   5   1

Rubric	Marks
Define the term harvesting?	2

Q23. How precision farming is useful in ornamental crops?   2   5   1

Rubric	Marks
Define DGPS?	2

Q24. (a) Define the mechanized harvesting of produce.   4   5   1

Rubric	Marks
Define the mechanized harvesting of produce.	4

(OR)

(b) What are the applications of precision farming in horticultural crops?

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