

4. Answer the following (**any three**) : (5×3=15)

- What do you understand about organic farming and how is it different from natural farming? What are the advantages and disadvantages of organic farming systems?
- What is the role of substrate in hydroponic systems? Write about the common substrates used in hydroponics.
- Why is nutrient solution important in hydroponics? Explain in detail.
- What is mineral deficiency? Give deficiency symptoms of any two nutrients.

5. Answer **any two** of the following : (7.5×2=15)

- What are the various pests and diseases associated with hydroponic farming systems? Explain any two pests and any two diseases of hydroponic systems along with methods used for their control.
- What Is Protected agriculture? What are the main types of protected agriculture systems? What technical and policy initiatives are taken by the government of India for popularizing protected cultivation.
- What are the various physical parameters of growth? Explain how light quality and quantity affect plant growth.

(1000)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3505 I

Unique Paper Code : 2164001003

Name of the Paper : Protected Agriculture:
Hydroponics and Organic
Cultivation

Name of the Course : **B.Sc. (H) Botany- Generic
Elective**

Scheme/Mode

of Examinations : NEP : UGCF-2022

Semester : I

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

- Write your Roll No. on the top immediately on receipt of this question paper.
- All questions carry equal marks.
- Attempt **four** questions in all including Question Number 1 which is compulsory.
- All parts of a question must be answered together.

P.T.O.

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1. (a) Expand the following (**any five**) : (1×5=5)

(i) SDP (ii) TDS

(iii) IPM (iv) DWC

(v) PGPR (vi) NSOP

(b) Explain briefly : (1×5=5)

(i) Nutrient film technique

(ii) Fertigation

(iii) Bolting

(iv) Organic certification

(v) Natural Farming

(c) Fill in the blanks (**any five**) : (1×5=5)

(i) The equipment used in hydroponics systems to oxygenate the nutrient solution is called as

(ii) The techniques where fish culture is combined with hydroponics is called as

(iii) The pest management strategy which uses the chemical stimuli to trap the insect pests in the field without harming the non-target species is called as

(iv) is a common by-product of the coconut industry used as a substrate in soilless cultivation.

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(v) The larvae of feed under the leaf surface.

(vi) A traditional insecticide prepared by adding cow dung, cow urine and neem leaves is called as

2. Write short notes on **any five** of the following :

(3×5=15)

(a) Role of auxins in plant growth

(b) GAP

(c) History of protected agriculture

(d) *Trichoderma*

(e) Traditional organic inputs of Indian system.

(f) Dutch bucket system, with its advantages and limitations.

3. Differentiate between **any three** of the following :

(5×3=15)

(a) Circulating and non circulating systems.

(b) Macro and micronutrients.

(c) Aquaponics and Aeroponics.

(d) Biofertilizers and Biopesticides.

P.T.O.