

S. No. of Question Paper: 5304

Unique Paper Code: 2164001203

Name of the Paper: Hydroponics and Organic Farming

Name of the Course: Botany- GE

Semester: II

Duration: 2 hours

Maximum marks: 60

Instruction for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **Four** questions in all. First question is compulsory.
3. All part of the questions to be attempted together.
4. All questions carry equal marks.

1. (a) Match the following:

- | | | |
|------------------|----------------------|-----------|
| (i) Trichoderma | (a) Bio-insecticide | |
| (ii) Gibberellin | (b) Biocontrol agent | |
| (iii) Auxin | (c) Ripening hormone | |
| (iv) Neem Oil | (d) Rooting hormone | |
| (v) Ethylene | (e) Bolting | (1x5 = 5) |

(b) Expand the following (attempt any five):

- (i) PGPR
 - (ii) IPM
 - (iii) GAP
 - (iv) TDS
 - (v) DWC
 - (vi) DO
- (1x5 = 5)

(c) Define the following (attempt any five) :

- (i) Biofertilizers
 - (ii) Aquaponics
 - (iii) Crop Rotation
 - (iv) Organic Farming
 - (v) Fertigation
 - (vi) Mulching.
- (1x5 = 5)

2. (a) Explain the benefits of using Panchgavya and Beejamrut in agriculture.
(b) Write about nitrogen nutrition, and also highlight its deficiency and toxicity symptoms in plants.
(c) Enlist the advantages and some hurdles of using hydroponics over traditional agriculture.

(5x3 = 15)

3. Write short notes on the following
(a) Objectives of protected cultivation
(b) Importance of red and far-red light in plant growth
(c) Closed loop systems used in hydroponics

(5x 3 = 15)

4. (a) Enlist the advantages of aeroponics over conventional hydroponics.
(b) What are the different government initiatives and policies for organic farming in India?
(c) What is pest resurgence and secondary pest outbreak?

(5x3=15)

5. (a) Write the important roles of essential macronutrients in plants.
(b) Write different types of biofertilizers used in agriculture.
(c) Explain the major physiological roles of cytokinins and abscisic acid in plants.

(5x3=15)

6. Attempt any two of the following:

- (a) What are biopesticides? Write their advantages, and name some commonly used biopesticides.
(b) Differentiate between nutrient film technique and deep flow technique using diagrams.
(c) Explain why organic agriculture rejects the use of genetically modified organisms.

(7.5x2=15)