

SRM VALLIAMMAI ENGINEERING COLLEGE
(An Autonomous Institution)

SRM Nagar-Kattankulathur –603203

DEPARTMENT OF AGRICULTURAL ENGINEERING

QUESTION BANK



IV SEMESTER

AG 3463 – PRINCIPLES AND PRACTICES OF CROP PRODUCTION

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Prepared by

Dr.N.Vairam,

Assistant Professor/Agriculture Engineering

UNIT-I: AGRICULTURE AND CROP PRODUCTION

Introduction to agriculture and its crop production sub-sectors - field crop production and horticulture; Factors affecting crop growth and production: genetic (internal) and environmental (external) factors; Crop management through environmental modification and adaptation of crops to the existing environment through crop cultural practices.

Q.NO	QUESTIONS PART-A	BT LEVEL	COMPETENCE
1.	Define Agriculture.	BT-1	Remembering
2.	State any two major sub-sectors under crop production.	BT-2	Understanding
3.	Define horticulture and mention any two of its branches.	BT-1	Remembering
4.	Differentiate between field crops and horticultural crops.	BT-2	Understanding
5.	State the importance of horticulture.	BT-1	Remembering
6.	What are the environmental factors affecting crop growth?	BT-2	Understanding
7.	What is crop adaptation?	BT-2	Understanding
8.	Define Photoperiodism.	BT-1	Remembering
9.	Compare Kharif crops and Rabi crops.	BT-1	Remembering
10.	What are genetic factors affecting crop growth? Give two examples.	BT-2	Understanding
11.	List any two abiotic factors affecting crop growth.	BT-1	Remembering
12.	What are the uses of forage crops?	BT-1	Remembering
13.	List any two advantages of mixed cropping.	BT-2	Understanding
14.	Write the difference between Manure and Fertilizer.	BT-1	Remembering
15.	Define crop rotation and give two examples of rotation sequences.	BT-2	Understanding
16.	Differentiate climatic factor and edaphic factor.	BT-2	Understanding
17.	What is mulching? Give two crop benefits of mulching.	BT-2	Understanding
18.	State any two objectives of tillage in crop production.	BT-1	Remembering
19.	What are high-temperature injuries in crops? Mention any two symptoms.	BT-2	Understanding
20.	Define drought tolerance and give two drought-resistant crops.	BT-1	Remembering
21.	How will you do crop management?	BT-2	Understanding
22.	What is meant by cropping pattern?	BT-1	Remembering

23.	Define Agronomy.	BT-1	Remembering
24.	What is the role of Agriculture Engineering in crop production?	BT-1	Remembering
Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
PART-B			
1.	Explain the major genetic characteristics of crops that determine their growth, productivity and adaptability.	BT-3	Applying
2.	Discuss briefly about the scope and importance of agriculture in India.	BT-4	Analyzing
3.	Explain in detail about internal and external factors affecting crop productions.	BT-4	Analyzing
4.	Explain the basic practices of crop production.	BT-3	Applying
5.	Discuss in detail about environmental modification and crop adaptation.	BT-4	Analyzing
6.	Explain the climatic factors and edaphic factors affecting crop production.	BT-4	Analyzing
7.	Write short notes on evolution of man and agriculture.	BT-4	Analyzing
8.	Define monsoon, write about Southwest and North east monsoon.	BT-3	Applying
9.	What are the tools used in agriculture.	BT-4	Analyzing
10.	Explain the concept of agriculture and discuss its role in economic development.	BT-4	Analyzing
11.	Describe the major sub-sectors of field crop production.	BT-4	Analyzing
12.	Explain agriculture in the aspect of art, science and business.	BT-3	Applying
13.	Describe in detail about the branches of agriculture.	BT-3	Applying
14.	What are the adaptation techniques followed for the existing environmental conditions?	BT-4	Analyzing
15.	Write the role of the plant nutrients and deficiency symptoms with examples.	BT-3	Applying
16.	Write in detail about the Agroclimatic zones of India and Tamil Nadu.	BT-4	Analyzing
17.	Describe about the crop cultural practices that help crops adapt to existing environmental conditions.	BT-4	Analyzing

UNIT-II: CROP SELECTION AND ESTABLISHMENT

Regional and seasonal selection of crops; Systems of crop production; Competition among crop plants; Spacing and arrangement of crop plants; Field preparation for crops including systems of tillage; Establishment of an adequate crop stand and groundcover, including selection and treatment of seed and nursery growing.

Q.NO	QUESTIONS PART-A	BT LEVEL	COMPETENCE
1.	What is cropping system?	BT-1	Remembering
2.	What is seed treatment?	BT-1	Remembering
3.	Brief the methods of crop geometry.	BT-1	Remembering
4.	Explain the term nursery	BT-1	Remembering
5.	What are the main effects of competition among crop plants?	BT-2	Understanding
6.	List out any four kharif and rabi crops	BT-1	Remembering
7.	What are the benefits of cropping system?	BT-2	Understanding
8.	Define seasonal selection of crops and give two examples.	BT-1	Remembering
9.	What is paired row planting?	BT-2	Understanding
10.	Define groundcover and give two of its benefits.	BT-1	Remembering
11.	Distinguish between primary and secondary tillage.	BT-1	Remembering
12.	Based on climatic condition, how will you classify crops?	BT-1	Remembering
13.	What is cropping system advantages and disadvantages?	BT-1	Remembering
14.	Define multiple cropping and give two examples.	BT-1	Remembering
15.	Evaluate the methods of seed treatment.	BT-2	Understanding
16.	Write about the objectives of seed treatment.	BT-2	Understanding
17.	Define tillage and list two types of tillage operations.	BT-1	Remembering
18.	What are pre-sowing seed treatments?	BT-2	Understanding
19.	List out any 4 major millets and minor millets.	BT-2	Understanding
20.	What is the method of selection of seeds?	BT-2	Understanding
21.	Write the need of relay cropping.	BT-1	Remembering
22.	Define Zero tillage.	BT-1	Remembering
23.	List two advantages of raising a nursery.	BT-1	Remembering
24.	What is reduced tillage?	BT-2	Understanding
25.	What are the disadvantages of zero tillage?	BT-1	Remembering
Q.NO	QUESTIONS PART-B	BT LEVEL	COMPETENCE

1.	What are the key requirements for improving productivity of crops?	BT-4	Analyzing
2.	i. Describe the major steps involved in field preparation for planting field crops. ii. Define Tillage and list the types of Tillage.	BT-3	Applying
3.	Explain how seasonal variations determine the choice of crops and planting schedules in different agro-ecological zones.	BT-3	Applying
4.	Illustrate the factors affecting plant population.	BT-4	Analyzing
5.	What is intercropping? Explain its importance with examples.	BT-4	Analyzing
6.	Discuss briefly about agronomic classification of crops.	BT-3	Applying
7.	Describe in detail about factors influencing selection of cropping system.	BT-3	Applying
8.	How crop geometry and crop planting increases yield?	BT-4	Analyzing
9.	Outline the following i. Mono Cropping ii. Crop Rotation.	BT-3	Applying
10.	Explain the types of Multiple cropping.	BT-4	Analyzing
11.	i. State the objectives of Tillage. ii. Importance of Plant Population.	BT-3	Applying
12.	Summarize the methods of seed treatment.	BT-3	Applying
13.	Detail the facts about crop stand establishment.	BT-3	Applying
14.	Outline the processes of selection of nursery site.	BT-3	Applying
15.	Elaborate the advantages and limitations of mixed cropping and intercropping.	BT-4	Analyzing
16.	Discuss the key factors involved in establishing a good crop stand and ensuring adequate groundcover.	BT-4	Analyzing
17.	Discuss any three (3) systems of tillage and evaluate their impacts on soil health and crop establishment.	BT-4	Analyzing

UNIT-III: CROP MANAGEMENT

Crop water Management; Crop nutrition management - need for supplementation to soil supplied nutrients, sources, generalized recommendations, methods and timing of application of supplemental nutrients; Crop protection including management of weeds, pests and pathogens; Integrated methods of managing water, nutrients and plant protection; Types and methods of harvest

Q.NO	QUESTIONS PART-A	BT LEVEL	COMPETEN CE
1.	How will you compute the field irrigation requirement of crops?	BT-1	Remembering
2.	State the advantages of Fertigation.	BT-2	Understanding
3.	Differentiate between surface irrigation and sprinkler irrigation.	BT-2	Understanding
4.	Compare irrigation efficiency and irrigation frequency?	BT-2	Understanding
5.	What is deficit irrigation?	BT-1	Remembering

6.	Discuss the sources of plant nutrients.	BT-2	Understanding
7.	Compare mobile nutrients and immobile nutrients with examples.	BT-2	Understanding
8.	What are the primary nutrients? Give examples.	BT-2	Understanding
9.	What is nutrient application?	BT-1	Remembering
10.	Name two methods of foliar application of nutrients.	BT-1	Remembering
11.	What do you mean by soil contamination?	BT-2	Understanding
12.	Which effluent contain high amounts of chromium?	BT-2	Understanding
13.	What is weed?	BT-1	Remembering
14.	What are the principles of weed control?	BT-1	Remembering
15.	Mention two components of Integrated Weed Management (IWM).	BT-1	Remembering
16.	What are the advantages of mechanical weed control method?	BT-2	Understanding
17.	Define biological control of pests.	BT-2	Understanding
18.	How do you control plant pathogens?	BT-1	Remembering
19.	What is economic threshold level (ETL)?	BT-2	Understanding
20.	Name two cultural methods of plant disease management.	BT-1	Remembering
21.	What is harvest maturity?	BT-1	Remembering
22.	Define harvest index with formula.	BT-1	Remembering
23.	List two indicators of physiological maturity in crops.	BT-2	Understanding
24.	Differentiate between manual harvest and mechanical harvest.	BT-2	Understanding
Q.NO	QUESTIONS PART-B	BT LEVEL	COMPETENCE
1.	Explain about Essential Plants Nutrients.	BT-4	Analyzing
2.	Describe the following Nitrogen Loss Phosphorus Deficiency	BT-4	Analyzing
3.	How Nitrogen improves crop production?	BT-4	Analyzing
4.	Outline the methods of nutrients management.	BT-3	Applying
5.	Illustrate the functions of Potassium Nutrients.	BT-3	Applying
6.	Discuss in detail about Fertigation.	BT-4	Analyzing
7.	Brief any four methods of irrigation used in agriculture, highlighting their advantages and limitations.	BT-3	Applying
8.	Explain how deficit irrigation and water conservation practices can be used to maintain crop yield under water-limiting conditions.	BT-4	Analyzing
9.	Discuss the importance of timing nutrient applications at different growth stages of crops.	BT-4	Analyzing

10.	List the harmful effects of weed growth in crops in detail	BT-4	Analyzing
11.	Write in detail about classification of weeds.	BT-3	Applying
12.	Describe the cultural, chemical and biological methods used in managing each of these crop enemies.	BT-4	Analyzing
13.	Define Integrated Pest Management (IPM) and explain its principles.	BT-3	Applying
14.	Elaborate the economic importance of weeds, pests and pathogens in crop production.	BT-4	Analyzing
15.	Discuss the role of cultural, biological, mechanical and chemical methods in an integrated approach to managing diseases.	BT-4	Analyzing
16.	Describe the different types of harvesting of crops. What are the machineries involved in harvesting of various crops?	BT-4	Analyzing
17.	Explain the factors that determine the correct maturity stage for harvesting and explain how improper harvesting affects crop quality and yield.	BT-4	Analyzing

UNIT-IV: PRODUCTION PRACTICES OF AGRICULTURALCROPS

Generalized management and cultivation practices for important groups of field crops in Tamil Nadu: cereal crops, grain legumes, oil seed crops, sugarcane, and fiber crops, and special purpose crops such as those grown for green manure.

Q.NO	QUESTIONS PART-A	BTLEVEL	COMPETENCE
1.	Mention two improved cultivation practices recommended for paddy in Tamil Nadu.	BT-1	Remembering
2.	State two advantages of using short-duration varieties in cereals.	BT-1	Remembering
3.	Define floating rice. List the varieties grown for Floating rice.	BT-1	Remembering
4.	List out the 3 institutions under CGIAR group along with mandatory crop.	BT-1	Remembering
5.	What is the latest advancement in rice crop production?	BT-2	Understanding
6.	Give two critical growth stages for irrigation in maize.	BT-1	Remembering
7.	List two nutrient management practices commonly followed for sorghum.	BT-1	Remembering
8.	What are grain legumes?	BT-1	Remembering
9.	Mention two reasons for inoculating pulses with Rhizobium culture.	BT-2	Understanding
10.	State two recommended practices for weed control in blackgram.	BT-1	Remembering
11.	List two common pests of pigeonpea.	BT-1	Remembering
12.	Give two suitable intercropping systems involving pulses in Tamil Nadu.	BT-1	Remembering
13.	Why Groundnut is called as unpredictable crop?	BT-2	Understanding
14.	State two reasons for adopting gypsum application in groundnut.	BT-1	Remembering
15.	Give two high-yielding varieties of sunflower and Groundnut grown in Tamil Nadu.	BT-1	Remembering
16.	List two major diseases of sesame.	BT-2	Understanding

17.	Mention two recommended planting methods for sugarcane.	BT-2	Understanding
18.	State two reasons for using sett treatment in sugarcane cultivation.	BT-1	Remembering
19.	List two major ratoon management practices.	BT-2	Understanding
20.	What are byproducts of sugarcane?	BT-1	Remembering
21.	State two pests commonly affecting jute or mesta.	BT-1	Remembering
22.	Give two types of cotton based on staple length.	BT-1	Remembering
23.	Compare Green manure and Green Leaf manure.	BT-2	Understanding
24.	State two advantages of incorporating green manure crops.	BT-1	Remembering
Q.NO	QUESTIONS PART-B	BT LEVEL	COMPETENCE
1.	Explain about any two cereal crops.	BT-4	Analyzing
2.	Describe in detail about green manure crops.	BT-4	Analyzing
3.	Outline the cultural practices of wheat crops.	BT-3	Applying
4.	Summarize the management and cultural practices of oilseeds.	BT-3	Applying
5.	Discuss how legume crops contribute to soil fertility and how this is integrated into crop rotation systems.	BT-4	Analyzing
6.	i. How jute production followed in India? ii. What are the products of Jute and Cotton?	BT-4	Analyzing
7.	Discuss the management of major pests and diseases in oilseed crops and their economic importance.	BT-4	Analyzing
8.	Explain the methods of nutrient and pest management for sugarcane to achieve optimal growth and yield.	BT-3	Applying
9.	Explain the cultural practices for production of Sugarcane.	BT-4	Analyzing
10.	Discuss about the role of sugarcane in Indian economy.	BT-4	Analyzing
11.	Explain the integrated nutrient, water, and pest management practices that ensure good fiber quality and yield.	BT-4	Analyzing
12.	Elaborate the diseases and pest occurring in Agricultural crops and their management.	BT-3	Applying
13.	Explain the common weed problems encountered in cereals, legumes, and fiber crops in Tamil Nadu.	BT-4	Analyzing
14.	Identify the practice and production techniques for cotton	BT-3	Applying
15.	Describe the harvesting methods for cereals, legumes.	BT-3	Applying
16.	Discuss generalized crop rotation and intercropping systems used in Tamil Nadu for cereals, legumes, and oilseeds.	BT-4	Analyzing
17.	Discuss post-harvest handling practices to maintain quality and minimize losses in oilseeds, and fiber crops.	BT-4	Analyzing

UNIT-V: PRODUCTION PRACTICES OF HORTICULTURAL CROPS

Important groups of horticultural crops in Tamil Nadu such as vegetable crops, fruit crops, flower crops; Cultivation practices of representatives of each group; Special features of production of horticultural crops - green house cultivation.

Q.NO	QUESTIONS PART-A	BTLEVEL	COMPETENCE
1.	Mention the major horticultural crops in Tamil nadu.	BT-1	Remembering
2.	Define Urban Horticulture.	BT-1	Remembering
3.	Give two methods of training and pruning in cucurbits.	BT-1	Remembering
4.	List two high-yielding brinjal varieties grown in Tamil Nadu.	BT-1	Remembering
5.	Mention two important pests of bhendi.	BT-1	Remembering
6.	Write down the advantages of kitchen garden.	BT-2	Understanding
7.	List two major diseases affecting citrus.	BT-2	Understanding
8.	Which climate conditions is suitable for mango growth?	BT-2	Understanding
9.	Which soil is best for banana cultivation?	BT-2	Understanding
10.	Mention two training systems used in grapes.	BT-1	Remembering
11.	Compare climacteric and non-climacteric fruits with examples.	BT-2	Understanding
12.	Compare olericulture and floriculture with examples.	BT-2	Understanding
13.	Define Pomology.	BT-1	Remembering
14.	State two major pests of rose.	BT-1	Remembering
15.	Mention two requirements for commercial tuberose cultivation.	BT-2	Understanding
16.	List two varieties of chrysanthemum.	BT-2	Understanding
17.	Which national organization supports horticulture?	BT-1	Remembering
18.	List two methods of propagation followed in flower crops.	BT-2	Understanding
19.	What are major fungal diseases of Horticultural crops?	BT-2	Understanding
20.	State two common fertigation practices followed in greenhouses.	BT-2	Understanding
21.	Mention two types of greenhouse structures.	BT-1	Remembering
22.	State two suitable crops for protected cultivation in Tamil Nadu.	BT-1	Remembering
23.	What is tunnel cultivation?	BT-2	Understanding
24.	What do you mean by hydroponics?	BT-2	Understanding
Q.NO	QUESTIONS PART-B	BT LEVEL	COMPETENCE
1.	How will you manage the nutrient application for Horticultural crops.	BT-4	Analyzing

2.	Discuss about the IPM in Horticultural crops with suitable examples.	BT-4	Analyzing
3.	Explain the procedure for preparing layout for the kitchen garden	BT-3	Applying
4.	Differentiate market garden and truck garden.	BT-3	Applying
5.	Enumerate briefly about mango cultivation.	BT-4	Analyzing
6.	Elaborate the scope and importance of fruit cultivation.	BT-4	Analyzing
7.	Write short notes on vegetables production scenario in India.	BT-3	Applying
8.	How will you classify vegetables based on cultural requirement and season?	BT-4	Analyzing
9.	Explain in detail about special systems of vegetable farming.	BT-3	Applying
10.	How will cultivate vegetables in floating water bodies? Explain it.	BT-4	Analyzing
11.	Classify fruits based on climatic requirements. Explain them in detail.	BT-3	Applying
12.	Write in detail about Jasmine and Rose cultivation.	BT-3	Applying
13.	Explain in detail about the material requirement for floral cultivation.	BT-4	Analyzing
14.	Compare Hydroponics and Aeroponics with advantages and disadvantages.	BT-3	Applying
15.	Explain about the training systems used in grapes	BT-4	Analyzing
16.	Why banana cultivation is important? How will you improve its Productivity?	BT-4	Analyzing
17.	What do you mean greenhouse cultivation? Why it is considered important?	BT-3	Applying