IFS-2002
AGRICULTURE

PAPER-I
SECTION A

1. Write short critical notes, not more than 150 words each, on any four of the following: (10 × 4 = 40)
(a) Land capability classification
(b) Carbon : Nitrogen ratio
(c) Crop - weed competition
(d) Selectivity of herbicides
(e) ICRISAT

2. What is agricultural drought and what are the major causes for its occurrence? Suggest management practices for late onset of monsoon, early-season drought and mid-season drought.
(40)

3. What is integrated nutrient management? How do you plan for such a system to monsoon season lowland rice crop?
(40)

4. Distinguish between the following: (10 × 4 = 40)
(a) Particle density and bulk density of soil
(b) Water requirement and irrigation requirement
(c) Intercropping, sequential cropping and relay cropping
(d) Result demonstration and method demonstration

SECTION B

5. Write short critical notes, not more than 150 words each, on any four of the following: (10 × 4 = 40)
(a) Soil — plant — water relationships
(b) Irrigation interval
(c) Soil amendments and conditioners
(d) Watershed management
(e) AGMARK standards

6. Why are certain crop growth stages most sensitive to soil moisture stress? Suggest water management practice for wheat and groundnut crops at time of variable water supplies.
(40)

7. What are the main principles of extension programme planning? Discuss the steps involved in programme planning process. (40)

8. Distinguish between the following: (10 × 4 = 40)
(a) Soil fertility and productivity
(b) Nitrification inhibitors and slow release nitrogen fertilizers.
(c) Crop rotation and ratoon cropping
(d) Partial budgeting and complete budgeting.

PAPER - II
SECTION A

1. Answer any four of the following in about 150 words each:
(a) Enumerate the methods of preservation fruits and vegetables.
(10)
(b) Write on the technique of preparation of pineapple squash.
(10)
(c) What are phytohormones? How are they used in plant propagation and breaking dormancy?
(2 + 4 + 4 = 10)
(d) What is a polyhouse? What are the benefits of polyhouses?

(4 + 6 = 10)
(e) List out commonly grown jasmine varieties and their methods of propagation.
(5 + 5 = 10)
2. Answer the following in about 150 words each:
(a) Distinguish between auxins and gibberellins.
(10)
(b) Discuss on the physiological effects of Gibberellins.
(10)
(c) What factors affect the rate of respiration in plants?
(10)
(d) How do aerobic and anaerobic respirations differ?
(10)
3. Answer the following in about 150 words each:
(a) What are cell organelles? Describe the structure and functions of Mitochondria and Golgi bodies.
(2 + 4 + 4 =10)
(b) What are ergastic substances? Write a note on them.
(2+8 =10)
(c) How ribosomes differ from microsomes?
(10)
(d) Define chromosomal aberration. List out different types of chromosomal aberrations.
(5 + 5 =10)
4. Write short notes on: (4 x 10 =40)
(a) Diseases favoured by soil
(b) Plant and leaf hoppers as vectors
(c) Management of vector borne diseases
(d) Saw-toothed grain beetle

SECTION B

5. Answer any four of the following in about 150 words each:
(a) Bring out five important pests on crucifers, their nature of damage and management.
(5+3+2=10)
(b) Bring out different pesticide formulations with short note on each.
(5 + 5 = 10)
(c) What are the qualities expected of a successful parasitoid?
(10)
(d) Explain the advantages and disadvantages of systemic diseases.
(5 + 5 = 10)
(e) List out 10 Pod borers on pulses with their systematic position. (Common name, Scientific name, Family, Order and describe their adults.
(10)
6. Answer the following in about 150 words each:
Define breeding methods, procedure for the following:
(a) Mass selection (2 + 4 + 4 = 10)
(b) Pure line selection (2 + 4 + 4 = 10)
(c) Pedigree method (2 + 4 + 4 = 10)
(d) Backcross method (2 + 4 + 4 = 10)
7. Answer the following in about 150 words each:
(a) What are colloids? Explain their properties. (2 + 8 = 10)
(b) Define diffusion. What factors influence the rate of diffusion? (2 + 8 = 10)

(c) Define and differentiate between transpiration and guttation. (2 + 8 = 10)
(d) What are cytokinins and their physiological effects? (2 + 8 = 10)
8. Write short notes on: (4 × 10 = 40)
(a) Sundrying of seeds
(b) Huller scarifier
(c) Mercurials in seed treatment
(d) Types of seed treatment and precautions observed in seed treatment. (Condition under which seed must be treated)