C.S.E. AGRICULTURE (MAIN) - 2005
PAPER - I

Time Allowed: Three Hours *Maximum Marks: 300*

Candidates should attempt Questions 1 and 5 which are compulsory, and any THREE of the remaining questions selecting at least ONE question from each Section.

SECTION-A

1. Write short notes on any three of the following in about 200 words each: 20x3=60
   (a) Biological methods of weed control
   (b) Potential evapotranspiration
   (c) Mineralogical organisation of silicate days
   (d) Modemisation in agriculture & environmental pollution
2. What are the causes of water logging in our country? How are the soil and crop productivity affected by it? Suggest methods of prevention to enhance agricultural production. 60
3. Write the nitrogen transformation processes in soils. What changes does nitrogen undergo regarding losses and availability? Why are legume crops beneficial in nitrogen fixation? 60
4. Give in tabular form sowing time, seed rate, spacing, fertilizer, irrigation and average yield in India of jowar, sunflower, peas, soyabean, mustard and groundnut for higher production. 60

SECTION B

5. Write short notes on any three of the following in 200 words each: 20x3=60
   (a) Lab to land programme
   (b) Soil profile
   (c) Agro forestry
   (d) Sprinkler irrigation system
6. What are the essential elements required for the growth of higher plants? Write the role of trace elements. How is the availability of these affected in varying soil conditions? 60
7. Differentiate between management of a farm and farm management. How is farm management useful to farmers of our country? What is the scope of farm management on small farms? 60
8. What are the difference between formal education and extension education? Which are the extension methods employed to introduce new agricultural technologies for the farming community? Write the beneficial effects of extension for increasing agricultural production. 60

PAPER - II - 2005

Time Allowed: Three Hours *Maximum Marks: 300*

Candidates should attempt Questions 1 and 5 which are compulsory, and any THREE of the remaining questions selecting at least ONE question from each Section.

All questions carry equal marks

SECTION-A

1. Answer any THREE out of the following, each in about 200 words: 20x3=60
   (a) What are cell organelles? Give their list. Discuss the function and the significance of any two of them.
   (b) Define genetic engineering. Discuss different components and its role in crop breeding.
   (c) Give the definition of bio-technology. Discuss its importance in crop improvement.
   (d) What is mutation? Give its classification. Describe in brief spontaneous and induced mutation.
2. Define seed and differentiate it from grain. Discuss the role of National Seeds Corporation and state seed certification agencies in production of quality seeds and its distribution. 60
3. Define Chromosome. Describe briefly the size, shape and number of Chromosomes found in crop plants. 60
4. Differentiate between any THREE of the following: 20 x 3 = 60
   (a) Mitosis and meiosis
   (b) Back cross and test cross
   (c) Phenotype and genotype
   (d) Homozygous and heterozygous

SECTION B

5. Answer any THREE of the following: 20x3=60
   (a) Define photosynthesis. Discuss its dark and light reactions.
   (b) Discuss about photoperiodism and vernalization. (c)Describe in brief the principal methods of fruit preservation.
   (d) Give the precautions in raising ornamental plants.
6. What is Integrated Pest Management? Describe the role of allelopathy to control insect-pests and plant pathogens. 60
7. Write scientific technique of raising table potato or vegetable pea under the following heads:
   (a) Soil, season and climate.
   (b) Row spacing, seed rate & method of sowing/planting
   (c) Manuring and fertilization
   (d) Yield
8. Write short notes on the following: 60
   (a) Storage pests of wheat or gram and their control.
   (b) Khaira disease of rice.
   (c) Public Distribution System.
   (d) Water economy in potato.