C.S.E. AGRICULTURE (MAIN} – 2004
***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 in about 200 words each on any three of the following: 60
   (a) Conservation of natural resources
   (b) Minimum tillage concept
   (c) Multipurpose tree species (MPTs)
   (d) Biological control of weeds
2. Give at least two names each of important pulses and oilseed crops grown in *Kharif* (autumn) and *Rabi* (winter) seasons. Discuss the constraints hOlding back production of pulses and oilseeds in India. Suggest measures to increase their production. 60
3. Classify herbicides used for weed control with examples. Discuss the advantages and limitations of using herbicides in crop production. What precautions should be taken during their application? 60
4. How does soil productivity differ from soil fertility? What are the factors responsible for degradation of soil productivity? Suggest practical measures to improve it. 60

SECTION B

5. Write short notes on any three of the following in about 200 words each: 60
   (a) Watershed management
   (b) Quality of irrigation water
   (c) Principle of limited capital and opportunity cost
   (d) Mechanization in agriculture
6. What are the main causes of low crop production and profit per unit area in India? Discuss specific measures by which the objective of maximization of crop production and profit can be achieved. 60
7. What do you mean by water and wind erosion? Write the mechanism and factors affecting them. Suggest measures for soil and water conservation. 60
8. Describe the importance and role of agricultural extension in the context of small and marginal farmers. Discuss the limitations in effective transfer of technology to the farmers in India. 60

PAPER - II- 2004

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. Answer any three of the following in about 200 words each: 20 x 3 = 60
   (a) Briefly describe leucoplastids and chromoplastids.
   (b) Define DNA and RNA, and compare them with each other.
   (c) What is heterosis? Explain its role in crop improvement.
   (d) Define mass selection. Describe the procedure of mass selection in brief.
2. (a)Define transpiration. What are the factors affecting transpiration? 20
   (b) Give an account in brief on hybrid rice production. 20
   (c) Define insect resistance in plants. Narrate achievements and accomplishments attained so far. 20
3. (a)Define pure line selection. Discuss the merits and demerits of pure line selection. 20
   (b) What is clone? Compare clones, inbreds and pure lines. 20
   (c) Define photosynthesis in plants. Narrate the sequen tial processes occurring therein with an illustration. 20
4. (a)Define disease epidemic. Discuss in brief the causes of epidemics. 20
   (b) What is distant hybridization? Describe in brief the limitations of distant hybridization in crop improvement. 20
   (c) Focus objectives and activities of grain storage institutions in India. 20

SECTION B

5. Answer any three of the following in about 200 words each: 20 x 3 = 60
   (a) Briefly explain the various classes of seeds. Describe the requirements for certified seeds.
   (b) Define pest. Bring out various groups of crop pestsquoting an insect for each and discuss how an insect outbreak occurs.
   (c) Describe in brief the package of practices for cultivation of papaya.
   (d) Define microbial control. Describe the procedurefor mass production of NPV of a lepidopteran pest.
6. (a)Discuss in brief the factors responsible to low yield of vegetables in India. What measures are necessary to increase their production? 20
   (b) Define pest forecasting. Describe how the pest fore casting is done in India and the fruits are made available to the farmers. 20
   (c) Discuss in brief the significance of Integrated Pest Management (I PM) in crop production. Suggest suitable IPM measures for sugarcane. 20
7. (a)Describe in brief the requirements of certified seeds. 20
   (b) Briefly mention the use of fungicides for the control of diseases of potato. 20
   (c) Discuss in brief the microbial toxins. 20
8. Write short notes on the following: 20x3=60
   (a) Preservation methods of fruits and vegetables
   (b) Stored grain pests
   (c) Bacillus thuringiensis