I.F.S.-2009

Serial No. 5644 B–JGT–J–BHB

AGRICULTURE

Paper—II

Time Allowed : Three Hours *Maximum Marks : 200*

INSTRUCTIONS

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.

The number of marks carried by each question is indicated at the end of the question.

Answers must be written in ENGLISH.

SECTION – A

1. Answer any **FOUR** of the following in about **150** words each :— 10×4=40

   (a) Enumerate different biotechnological techniques being used for crop improvement programme. 10

   (b) What are the various steps involved in the production of certified seeds ? 10

   (c) Describe in brief the structural and numerical changes in chromosomes. 10

(d) Discuss the relevance of male sterility in plant breeding and briefly mention its limitations.

6+4=10

(e) Describe parthenogenesis found in insects with suitable examples. 10

2. Write short notes on the following in about **150** words each :— 10×4=40

(a) What is self incompatibility ? How can this problem in plant breeding programme be overcome ? 4+6=10

(b) Environment-friendly approaches in pest management programme. 10

(c) Photoperiodism. 10

(d) Phytohormones and their role in plant growth. 10

3. Distinguish between each pair below in about **150** words each :— 10×4=40

(a) Parasite and predator.

(b) Butterfly and moth.

(c) Mass selection and pure line selection.

(d) Immunity and resistance.

4. Give the scientific name, classification and nature of damage caused of the following pests :— 10×4=40

(a) White grub.

(b) Red hairy caterpillar.

(c) Brinjal fruit borer.

(d) Mango jassid.

Contd.

SECTION - B

5. Write short notes on any **FOUR** of the following in about **150** words each :— 10×4=40

   (a) Package of practices of Maize Cultivation. 10

   (b) Ecta-hormones. 10

   (c) Cultural methods of pest management. 10

   (d) Heterosis. 10

   (e) Insecticide resistance management. 10

6. (a) Distinguish between each pair below in about **150** words each :— 10×2=20

   (i) Hibernation and Diapause.

   (ii) Acaricide and Nematicide.

   (b) Name four important storage pests of pulses. Describe briefly the biology and management of any one of them. 2+4+4=10

   (c) What are transgenic plants ? Discuss in brief their merits and demerits. 4+6=10

7. (a) What are carbamate insecticides ? Discuss in brief their mode of action. 4+6=10

   (b) Compare in brief diffusion and osmosis. 10

   (c) Discuss the method of onion seed production. 10

   (d) Briefly enumerate the major constraints in the production of fruits and vegetables in India. 10

8. Write short notes on the following in about **150** words each :— 10×4=40

   (a) Vernalisation.

   (b) Propagation of ornamental plants.

   (c) Biometer and its significance in pest management.

   (d) Organisation and functions of ICRISAT.