

1. 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.

## SECTION - B

5. Write short notes on any **FOUR** of the following in about **150** words each :—  $10 \times 4 = 40$
- (a) Package of practices of Maize Cultivation. 10
  - (b) Ectahormones. 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 :—  $10 \times 2 = 20$
- (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 :—  $10 \times 4 = 40$
- (a) Vernalisation.
  - (b) Propagation of ornamental plants.
  - (c) Biometer and its significance in pest management.
  - (d) Organisation and functions of ICRISAT.

