

**2009**  
**AGRICULTURE - II (Optional)**

100293

*Standard : Degree**Total Marks : 200**Nature : Conventional**Duration : 3 Hours***Note :**

- (i) Answers must be written in **English** only.
- (ii) Question No. 1 is **Compulsory**. Of the remaining questions, attempt **any four** selecting one question from **each section**.
- (iii) Figures to the **RIGHT** indicate marks of the respective question.
- (iv) Number of optional questions upto the prescribed number in the order in which they have been solved will only be assessed. Excess answers will not be assessed.
- (v) Credit will be given for orderly, concise and effective writing.
- (vi) Candidate should not write roll number, any name (including their own), signature, address or any indication of their identity anywhere inside the answer book otherwise he/she will be penalised.
- (vii) For each slab of 10, 15 and 20 marks, the examinee is expected to write answers in 125, 175 and 250 words respectively.

**1. Answer any four of the following (10 Marks each) :**

- (a) Name different classes of seeds. Describe the general principles of quality seed production with reference to self - and cross-pollinated crops. 10
- (b) (i) What are semio-chemicals ? How can these be helpful in pest management ? 5
- (ii) What are the principles of pest management ? 5
- (c) Critically examine the nature of food problem in India. Is the food policy followed in the country able to solve the problem ? 10
- (d) Briefly mention some of the important and relevant implications of remote sensing in agriculture and in management of natural resources. 10
- (e) Write short note on **any two** of the following : 10
  - (i) Commission for Agricultural Costs and Prices (CACP).
  - (ii) National Bank for Agriculture and Rural Development (NABARD).
  - (iii) Three-Tier-Cooperative Credit-Institutions.
  - (iv) Intellectual Property Rights (IPR).
  - (v) Agricultural Business Management.
  - (vi) Co-operative Movement in Maharashtra.

**P.T.O.**

## SECTION - A

2. Answer the following sub-questions :
- (a) What are nucleic acids ? Give their role in plants. Distinguish between RNA and DNA. 15
  - (b) What are the breeding methods followed for a selection process ? Mention the merits and demerits of each process with crop examples under varying ecosystems. 10
  - (c) What are CAM plants ? How do they differ from C4 plants and which of the two is more efficient ? Give mechanism of carbon fixation in CAM plants. 15
3. Answer the following sub-questions :
- (a) State the laws of heredity. Briefly discuss their significance in plant breeding and in crop improvement programme. 15
  - (b) What do you mean by hybridization ? Explain it with special reference to : 10
    - (i) hybrid vigour and its exploitation and
    - (ii) back cross method of breeding.
  - (c) Give an account of physiological role of ethylene alongwith their commercial applications. 15

## SECTION - B

4. Answer the following sub-questions :
- (a) (i) Describe different methods used for fore-casting plant diseases. 5
  - (ii) Write insect vectors of plant diseases with examples. 5
  - (b) (i) Write causal organism, symptoms and management of bacterial leaf blight disease of cotton. 5
  - (ii) Write causal organism, symptoms and management of Tikka disease of groundnut. 5
  - (c) (i) Describe the characteristics of order Lepidoptera, some insects of economic importance of crops in Maharashtra State and control of gram pod borer in gram. 5
  - (ii) Write marks of identification, nature of damage, extent of losses and management of pink ball worm in cotton. 5
  - (d) (i) Define 'Pesticide'. Write qualities of an ideal pesticide. 5
  - (ii) Write causal organism, extent of losses, symptoms and management of Molya (Tundu) disease of wheat. 5

		Marks
5.	Short answer type questions :	
(a)	(i) Write rules of Koch's postulates.	5
	(ii) Write characteristics of virus.	5
(b)	(i) Write causal organism, symptoms and management of phyllody disease of sesamum.	5
	(ii) Write causal organism, symptoms and management of green ear disease of bajra.	5
(c)	(i) Write marks of identification, nature of damage, extent of losses and management of onion thrip.	5
	(ii) Define Integrated Pest Management. How can this concept be useful in pest control ?	5
(d)	(i) Write preventive and remedial measures for safe storage of grains.	5
	(ii) Explain characteristics of Nematodes causing plant diseases.	5

### SECTION - C

6. Answer the following sub-questions :
- |     |  |    |
|-----|--|----|
| (a) | Analyse the food production and consumption scenario in Maharashtra and also explain whether the scenario has been able to tackle the nutritional security of the state.         | 10 |
| (b) | What are the strategies to be adopted for a sustainable breeding and management of dairy animals ? Give your critical suggestions with a special reference to Maharashtra State. | 15 |
| (c) | What is tissue culture ? How are haploid plants produced through this technique ? Enumerate the role of tissue culture in plant improvement.                                     | 15 |
7. Answer the following sub-questions :
- |     |   |    |
|-----|---|----|
| (a) | Even though self-sufficiency of food production has been achieved to some extent in the country, the population still lacks access to balanced food. Briefly discuss how best it can be solved. | 10 |
| (b) | Enumerate with illustrations the metabolism of animal feed with due importance to digestion and its absorption.   | 15 |
| (c) | Write critical notes on :   | 15 |
|     | (i) Totipotency of the cell   |    |
|     | (ii) Protoplast culture and   |    |
|     | (iii) Cybridization   |    |

[www.mpscmaterial.com](http://www.mpscmaterial.com)

## SECTION - D

8. (a) Explain **any three** of the following : 15
- (i) Farm Management
  - (ii) Farm Planning
  - (iii) Distinction between types and systems of farming
  - (iv) List Marketing Institutions and Agencies
  - (v) Problems of agricultural marketing
  - (vi) Agricultural marketing
- (b) Explain **any three** of the following : 15
- (i) Extension Education
  - (ii) Steps of programme evaluation
  - (iii) Stratified random sampling
  - (iv) Various audio-visual aids
  - (v) Steps for conducting socio-economic surveys
  - (vi) Objectives of KVK (Krishi Vigyan Kendra)
- (c) Explain **any two** of the following : 10
- (i) Organisational structure of Agricultural Technology Management Agency
  - (ii) Technology Assessment and Refinement
  - (iii) Training of Rural Youth for Self Employment
  - (iv) Public Agricultural Extension Services
  - (v) Information Technology in Agricultural Marketing
  - (vi) Agricultural Technology Information Centre
9. (a) Explain **any three** of the following : 15
- (i) Importance of Farm Management
  - (ii) Budgeting
  - (iii) Factors determining Types of Farming
  - (iv) Scope and subject matter of agricultural marketing
  - (v) Measures to overcome the marketing problems
  - (vi) Price discovery and price determination

P.T.O.

**Marks**  
**15**

- (b) Explain **any three** of the following :
- (i) List various sampling methods
  - (ii) Types of extension programme evaluation
  - (iii) Steps for preparation of poster
  - (iv) Selection criteria for appropriate audio-visual-aids
  - (v) Steps for conducting result demonstration
  - (vi) Single window system organization
- (c) Write short notes on **any two** of the following :
- (i) Lab to Land Programme
  - (ii) Integrated Rural Development Programme
  - (iii) Electronic mass media in agricultural extension
  - (iv) Objectives of Kisan Call Centres
  - (v) List Private Agricultural Extension Services

**10**

[www.mpscmaterial.com](http://www.mpscmaterial.com) - o o o -