

WBCS MADE EASY

2023

MWC(O)-AG-II/23

AGRICULTURE

Paper II

Time Allowed – 3 Hours

Full Marks – 200

If the questions attempted are in excess of the prescribed number, only the questions attempted first up to the prescribed number shall be valued and the remaining ones ignored.

*Answers may be given either in English or in Bengali
But all answers must be in one and the same language.*

Group A

Answer any three questions.

1. (a) Classify seeds. Narrate the steps of seed certification. 5+10=15
(b) Discuss on seed production of hybrid rice or hybrid maize. 15
(c) Write a short note on seed quality testing. 10

2. (a) Describe briefly the cultivation practices of mango with special reference to variety, planting, intercultural operation, nutrient and pest management, harvesting and yield. What do you mean by geographical indication (GI) of mango of West Bengal? 25
(b) Discuss on protected cultivation of horticultural crops. 15

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3. (a) Narrate the steps of synthesis of ATP during photophosphorylation. Diagrammatically represent C3 pathway of photosynthesis. Compare among the pathways of C3, C4 and CAM. 8+6+6=20
(b) Write down the mechanism of opening and closing of stomata. 8
(c) Make a list of two pests and two diseases for one important fruit, vegetable, flower along with their control measures. 4×3=12

4. (a) What do you mean by photoperiodism? Mention the effects of photoperiods on growth and development of plants. 10
(b) Describe the physiological roles of gibberellins, cytokinins and abscissic acid in plants. 15
(c) Discuss on salinity and drought stress with reference to symptoms of plants and mitigation options. 15

5. (a) Mention the importance of pure-line selection in plant breeding. 10
(b) Highlight main features of mutation breeding. Differentiate between traditional breeding and ideotype breeding. 10+5=15
(c) Discuss on different types of molecular markers used in crop research with their advantages. 15

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Group B

Answer *any two* questions.

6. (a) What do you mean by plant genetic resources (PGR)? What methods do you suggest for conservation of PGR? Mention the role of Protection of Plant Varieties and Farmers' Authority (PPV&FRA). 5+10+5=20
- (b) How can you relate the importance of plant genetic resources in climate change situation. Discuss briefly on genetically modified (GM) crops along with their scope of cultivation in India. 10+10=20
7. (a) Explain Mendel's law of inheritance. 10
- (b) Mention different reproductive features that facilitate cross-pollination and self-pollination in plants. 15
- (c) Discuss on seed production of any one cross-pollinated oilseed or vegetable crop. 15
8. Write short notes on (any five): 8×5=40
- (a) Landscaping
 - (b) Integrated Pest Management (IPM)
 - (c) Male sterility and its use in crop improvement
 - (d) Polyploids in agriculture
 - (e) Meiotic cell division
 - (f) Medicinal plants in West Bengal
 - (g) Backcross breeding
 - (h) Scope of export of agricultural products from West Bengal

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