

| |
|------------------|
| CSM—8/24 |
| PART—II/PAPER—VI |
| AGRICULTURE |
| PAPER—I |

Time : 3 Hours

Full Marks : 250

The question paper contains 18 (Eighteen) questions in GROUP—A, (12) and GROUP—B, (06) together.

GROUP—A

Candidates to attempt 10 (ten) questions within word limit of 250.

Each question carries 15 marks.

1. Mention the critical irrigation stages of rice, wheat, maize, sorghum and pearl millet.
2. Explain the role of pulses in sustainable agriculture. Discuss biological nitrogen fixation, soil fertility improvement and their inclusion in cropping systems.
3. Explain the modern classification of Indian soils as per the ICAR (All India Soil and Land Use Survey) or NBSS & LUP. Describe the major soil groups with their properties, distribution and suitable crops.
4. Explain the major cropping systems practiced in the Eastern Himalayan and North-Eastern regions. Discuss the roles of shifting cultivation, plantation crops and horticultural crops in shaping the agricultural landscape of this zone.
5. Describe the production technology of rice under transplanted, direct-seeded and SRI methods. Compare the productivity and resource-use efficiency of each system.

Candidate
must not
write on
this margin.

6. Explain different methods of weed dissemination in detail.
7. What are the roles of mulching and residue retention in improving WUE?
8. Describe the harmful and beneficial effects of weeds in agriculture. How can some weeds be utilized rather than eradicated?
9. Discuss crop rotation and intercropping systems involving pulses, cereals and fodder crops. Explain how these systems improve soil health and productivity.
10. Discuss the roles of conservation agriculture practices (zero tillage, residue retention and precision levelling) in improving water use efficiency in wheat and rice systems.
11. Discuss parent material and topography as soil-forming factors. How do they determine soil texture, fertility status and horizon differentiation?
12. Evaluate the roles of soil moisture measurement tools (tensiometer, gypsum block, TDR probe and neutron moisture meter) in determining irrigation intervals in cereals. Discuss their practical applicability.

Candidate
must not
write on
this margin.

GROUP—B

Candidates to attempt 05 (five) questions within word limit of 300.

Each question carries 20 marks.

13. Analyze the need for natural resource conservation in the context of rising population and climate change. Suggest policies and community-based approaches for effective conservation.
14. Compare the resource availability, income levels, risk-bearing ability and technology adoption behaviour of big farmers vs. small farmers.

15. What are the major causes of biodiversity loss and how does each of them affect biodiversity? Explain with examples. •
16. Explain water resource management in India. Discuss issues such as over extraction, groundwater depletion, river pollution and watershed management. •
17. Discuss the major factors that determine the choice of farming system in a region. •
18. Explain the concept of ecology and describe its major levels of organization. Discuss how ecological principles are directly relevant to human welfare, economic development and environmental sustainability.

**Candidate
must not
write on
this margin.**