

CSM—16/23
PART—II/PAPER—VI
BOTANY
PAPER—I

Candidate
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write on
this margin.

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. What are plasmids? Write down the characteristic features and biological significance of plasmids.
2. What is black stem rust of wheat? Illustrate the life cycle of the causal organism of this kind of rust disease.
3. What is meant by bacterial conjugation? Diagrammatically discuss the steps and mechanism of bacterial conjugation for the transfer of genetic material.
4. Write a comparative account of liverworts and hornworts with reference to their gametophytic and sporophytic structures.
5. Give a brief account of Bentham-Hooker's system of angiosperm classification with its merits and demerits.
6. Write a comparative account of the Rubiaceae and Cucurbitaceae.
7. What is anomalous secondary growth? Discuss the nature of anomalous secondary growth seen in *Bignonia* stem.

8. What is pollination? Discuss the process of double fertilization in angiosperms.
9. Discuss in detail the chi-square test and write some of its applications.
10. What is somatic hybridization? Describe the process of formation of somatic hybrids.
11. What is botanical garden? Why are botanical gardens so important?
12. What are herbaria? Discuss the roles of herbaria. Write briefly about virtual herbaria.

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write on
this margin.**

GROUP—B

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

Each question carries 20 marks.

13. Discuss the applied aspects of palynology with reference to melissopalynology and forensic palynology.
14. What does it mean by Vavilov's Centre of Origin? Name the main centres of crop diversity as proposed by Vavilov. Write down the utility and limitations of Vavilov's work.
15. Discuss in detail the requirements to practice plant tissue culture. What are cybrids?
16. Write notes on 'Central tendency' and 't-test'.
17. Describe the applications of microbes in agriculture and medicinal industry.
18. Compare Orchidaceae with that of Poaceae. Write the importance of the family Apiaceae.

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