

WBCS MADE EASY

MWC(O)-BOT-I/23

2023

BOTANY

PAPER-I

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.

*Answer may be given either in **English** or in **Bengali** or in **Nepali** but all answers must be in one and same language.*

Group-A

Answer any four of the following.

1. Write brief notes on any four of the following: 10×4=40
 - (a) Ecological importance of Lichen
 - (b) Description of Williamsonia
 - (c) Application of forensic palynology
 - (d) Autecology and synecology
 - (e) Pathotoxins and phytovivotoxins
 - (f) Age and area hypothesis of endemism
2. Explain any four of the following: 10×4=40
 - (a) Adaptive anatomical features of xerophytes
 - (b) Tunica-Corpus theory of shoot apex
 - (c) Placentation types in angiosperm
 - (d) Parasexuality in fungi Deuteromycetes
 - (e) Major characteristic features of Rhodophyceae
 - (f) Phytoremediation
3. Distinguish between any four of the following: 10×4=40
 - (a) Biotrophic and necrotrophic plant pathogens
 - (b) Trace fossils and index fossils
 - (c) Diagnostic features of Orchidaceae and Zingiberaceae
 - (d) Actinobacteria and eubacteria
 - (e) True fruit and false fruit with examples
 - (f) Melisopalynology and aeropalynology

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4. Discuss *any four* of the following: 10×4=40
- (a) Criteria for designation of Biosphere reserve zones and Gyopreservation and Oxygen sink
 - (b) Characteristics of Medullosales
 - (c) Role of botanical gardens in conservation of plants
 - (d) Endemism in Indian flora with reference to Sundarban
 - (e) Post-fertilization changes in ovule and development of endosperm in angiospermic flower.
 - (f) Distribution of mechanical tissues in plants
5. Write and illustrate *any four* of the following: 10×4=40
- (a) Stellar types found in plant
 - (b) Food value of mushroom and ecomic development
 - (c) Secondary growth of the stem *Dracaena* and root of *Tinospora*
 - (d) Origin of seed habit in Pteridophyta
 - (e) Draw and write up on disease cycle of brown spot of rice. Ecological importance of forest
 - (f) Phytogeographical regions of India

Group-B

Answer *any two* questions.

6. (a) State basic characters of Heterokontophyta. Comment on the thallus organisation of this group. Write on principles of microalgae culture. 4+3+3=10
- (b) Give a brief outline of cheese production. Discuss heterothallism in fungi. 5+5=10
7. (a) Name economically important plants and their uses (*any two* from each) of family Orchidaceae and Solanaceae. Write down the chemical structure of sporoderm. Illustrate the structure of spore aperature types. 4+2+4=10
- (b) Enumerate the major categories of plasmids found in bacterial cell. Why do bacterial cells carry plasmids? What are the biological significance of plasmids? 4+2+4=10
8. (a) Discuss the role of Bryophyta in ecology with special reference to plant succession. Write down the seral stages with reference to Hydrosere. 5+5=10
- (b) Illustrate the structure of male and female reproductive parts of *Cycas*. 5+5=10

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