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4 SEM TDC BOTH (CBCS) C 8

2026

(May/June)

BOTANY

(Core)

Central Library & Information Centre, Sibsagar Girls' College
Date .....

Paper : C–8

(Molecular Biology)

Full Marks : 53
Pass Marks : 21

Time : 3 hours

The figures in the margin indicate full marks for the questions.

1. Choose the correct answer of the following : 1×5=5

(a) The site of protein synthesis is mitochondria / ribosome / chloroplast.

(b) The clover leaf model of tRNA was proposed by Erwin Chargaff / Robert Holley / Linus Pauling.

(c) RNA polymerase enzyme is necessary for transduction / termination / transcription.

(d) The two strands of DNA are held together by covalent bond / hydrogen bond / ionic bond.

(e) The initiation codon is AUG / GGU / AAU.

2. Write briefly on the following (any *three*) : 4×3=12

(a) Inhibition of protein synthesis

(b) Important features of DNA as the genetic material

(c) Split genes

(d) Transcription factors

(e) Functions of DNA

3. Who coined the term nucleic acid and what are the types of nucleic acids? Discuss the structure of different types of RNA and their functions. 1+2+9=12

Or

Distinguish between the following : 6+6=12

(a) Transcription and Translation

(b) B-DNA and Z-DNA

4. Who proposed that DNA has a double-helical structure? Discuss with experimental evidence that "DNA replication is semi-conservative and bidirectional." 1+8+3=12

Or

Write explanatory notes on the following : 6+6=12

(a) Chloroplast DNA

(b) Fidelity of translation

5. What is genetic code? Discuss the characteristic features of genetic code. What are the types of codon? 1+8+3=12

Or

Write short notes on the following : 4×3=12

(a) Charging of tRNA

(b) Splicing pathway of group I

(c) DNA organization in prokaryotes

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4 SEM TDC BOTH (CBCS) C 9

2026

(May/June)

BOTANY

(Core)

Paper : C–9

Gms. College Central Library & Information Centre
Date .....

(Plant Ecology and Phytogeography)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

The figures in the margin indicate full marks for the questions.

1. *(a)* Choose the correct answer of the following : 1×3=3

(i) The first level of ecological organization is biome / individual / population.

(ii) Grazing food chain starts with plant / microbes / soil.

(iii) Energy pyramid is always downward / upright / large at middle.

(b) Fill in the blanks : 1×2=2

(i) Lichen is an example of _____ relationship.

(ii) _____ is the example of sedimentary biogeochemical cycle.

2. Write short notes on any *three* of the following : 4×3=12

(a) Homeostasis

(b) Soil profile

(c) Parasitism

(d) Water in soil

(e) Light as an ecological factor

3. Define succession. What are the different types of succession? Explain the climax concept in the process of succession. 2+5+5=12

Or

Write explanatory notes on the following : 6×2=12

(a) Natality and mortality

(b) Nitrogen cycle

4. Define ecosystem. Explain two different models of energy flow in ecosystem. 2+10=12

(Continued)

Or

Write notes on the following : 4×3=12

(a) Gross primary productivity and net primary productivity

(b) Ecotone and edge effect

(c) Ecological speciation

5. What are the different principles of phytogeography? 12

Or

Write explanatory notes on the following : 6×2=12

(a) Theory of continental drift

(b) Tropical biome

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Total No. of Printed Pages—3

4 SEM TDC BOTH (CBCS) C 10

2026

(May/June)



BOTANY

(Core)

Paper : C–10

(Plant Systematics)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

The figures in the margin indicate full marks for the questions.

1. *(a)* Choose the correct answer of the following : 1×3=3

(i) The term 'taxonomy' was coined by A. P. de Candolle / Carolus Linnaeus / Julian Huxley.

(ii) The inflorescence of Marigold is Corymb / umbel / capitulum.

(iii) The author of *The Flora of British India* is Kanjilal *et. al* / N. L. Bor / Sir J. D. Hooker.

(b) Fill in the blanks of the following : 1×2=2

(i) When the anthers and filaments of stamens are united it is called _____.

(ii) Inflorescence of the family Lamiaceae is _____.

2. Write short notes on any *four* of the following : 4×4=16

(a) E-flora

(b) Author citation

(c) Single-access key

(d) OTUs

(e) Phylogenetic tree

(f) Virtual herbarium

3. What is cytotaxonomy? Discuss how cytological data helps is plant taxonomy. 2+10=12

Or

Write morphological characters and economic importance of the following families : 6×2=12

(a) Orchidaceae

(b) Magnoliaceae

4. By mentioning its merits and demerits, discuss Bentham and Hooker system of classification. 4+8=12

(Continued)

Or

Write explanatory notes on the following : 6×2=12

(a) Herbarium technique

(b) Taxonomic hierarchy

5. Define species. Discuss biological and evolutionary species concept in brief. 1+3½+3½=8

Or

Write notes on the following : 4×2=8

(a) Contribution of Linnaeus towards plant taxonomy

(b) Origin and evolution of angiosperms

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