

2015

BOTANY

[Honours]

PAPER – III

Full Marks : 90

Time : 4 hours

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

GROUP – A

1. Answer any *ten* of the following : 2 × 10
- (a) Define 'taxon'. Who coined the term 'taxon' ?
- (b) Distinguish between parallel and convergent evolutions.

- (c) What is 'double author citation' ?
- (d) Name the types of fruit found in the following plants :
- (i) *Brassica campestris*
 - (ii) *Pisum Sativum*
 - (iii) *Solanum melongena*
 - (iv) *Ocimum Sanctum*.
- (e) What is gynostegium and in which family it is found ?
- (f) Distinguish between apogamy and apospory.
- (g) Write the morphological and chemical nature of fibre of cotton.
- (h) Write down the morphological nature of coir and turmeric.
- (i) Distinguish between economic botany and ethnobotany.
- (j) What is Tautonym ? Give an example.
- (k) Write down the scientific name of one spice yielding plant.

- (l) Write the full form of ICBN and ICN.
- (m) What is cleistogamy ? Give one example.
- (n) What is gynobasic style ? Where is it found ?
- (o) What is sorosis ? Give example.

GROUP – B

2. Answer any *five* of the following : 8 × 5

- (a) What is chemotaxonomy ? Discuss the role of phytochemicals in resolving taxonomic disputes. State the advantages of numerical taxonomy. 1 + 5 + 2
- (b) Describe the floral characters with suitable figures of Alismataceae. Write down the evolutionary significance of this taxon. (4 + 2) + 2
- (c) What is herbarium ? What are the objectives of herbarium ? Mention the role of botanical gardens for taxonomic studies. 2 + 4 + 2

- (d) What is nomenclatural type ? Mention the different major nomenclatural types in taxonomy. 2 + 6
- (e) What is microgametogenesis ? With suitable diagrams describe the microgametogenesis in angiosperms. 2 + (2 + 4)
- (f) What are the differences between effective and valid publications. Who wrote the book 'species plantarum' and in which year ? 6 + 2
- (g) Write down the uses of lemongrass. Give a general account of Silviculture of Teak. 2 + 6
- (h) Mention the economic importance economically used part(s) and the morphological nature of any *four* of the following plants. 2 × 4
- (i) *Gmelina arborea* Roxb.
 - (ii) *Jatropha Curcas* Linn.
 - (iii) *Eucalyptus citriodora* Hook.
 - (iv) *Rauwolfia Serpentina* Benth. exkurtz.
 - (v) *Canabis sativa* Linn.

(vi) *Abelmoschus esculentus* (Linn.)
Moench.

(vii) *Anacardium occidentale* Linn.

GROUP – C

3. Answer any *two* of the following : 15 × 2
- (a) Classify the ornamental plants. Describe the methods of cultivation of tuberose and mention its trading process. 5 + 8 + 2
- (b) Give an outline of Bentham and Hooker's system of classification. Mention its merits and demerits. Why is Bentham and Hooker's system of plant classification considered a 'natural system' and that of Engler and Prantl's a phylogenetic system. 8 + 4 + 3
- (c) Compare the floral characteristics of the following pairs of families : 3 × 5
- (i) Scrophulariaceae and Acanthaceae
- (ii) Arecaceae and Liliaceae

- (iii) Magnoliaceae and Nymphaeaceae
- (iv) Euphorbiaceae and Asclepiadaceae
- (v) Rutaceae and Anacardiaceae.

(d) Write notes on any *three* of the following : 5 × 3

- (i) Contrivances for cross pollination
 - (ii) Types of placentation
 - (iii) Anatomical informations used in taxonomic study
 - (iv) Types of aestivation
 - (v) Morphology of the Spivelet of poaceae
 - (vi) Types and morphological nature of endosperms.
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