

2015

BOTANY

Paper : 103 (Old Course)

**DIVERSITY AND SYSTEMATICS OF
PHANEROGAMS**

Full Marks : 80

Time : 3 hours

The figures in the margin indicates full marks for the questions

1. Answer the following questions 1×9=9
- (i) Flowers of Angiosperm is a modified shoot because
- (A) Epicalyx is present in some flowers
 - (B) Essential organs are present in some flowers
 - (C) Presence of the shoot characters
 - (D) In some flowers thalamus became elongated and shows distinct nodes and internodes
- (ii) In monoecious plant
- (A) Male and female parts are borne the same plant but not by the same flower
 - (B) Male and female parts are borne by the same flowers
 - (C) Male and female parts are borne in different plant
 - (D) None of the above
- (iii) The chief merit of Bentham and Hooker classification is that
- (A) It is a natural system of classification of all the groups of plants

- (B) It is an artificial system of classification of all the groups of plants
- (C) A system based on evolutionary concept.
- (D) The descriptions of taxa are based on actual examination of the species
- (iv) Deeply sunken stomata is a characteristics features of
- (A) Vascular cryptogams
- (B) Angiosperm
- (C) Gymnosperms
- (D) All of the above
- (v) Which of the following statement is not correct for the family Orchidaceae
- (A) The family is generally considered as a natural group
- (B) On the basis of *rbcL* sequences it is confirmed that the family monophyletic origin
- (C) On the basis of *rbcL* sequence data it is confirmed that the family polyphyletic in origin
- (D) In APG III Classification the family placed under order Asparagales
- (vi) The most advanced order in gymnosperms is:
- (A) Cycadales
- (B) Gnetales
- (C) Taxales
- (D) Coniferales
- (vii) In Plant taxonomy Holotype designated as:
- (A) Original specimen used by the author for publication
- (B) Duplicate specimen used by the author for publication

- (C) Specimen collected from same locality.
- (D) Specimens collected from the different locality
- (viii) Phloem of Gymnosperm differ from Angiosperm in
- (A) Having parenchyma
- (B) Having no companion cells
- (C) Having no sieve tubes
- (D) Having no schlerenchyma
- (ix) *Nomen nudum* (nom. nud.) is:
- (A) A name with accompanying description
- (B) A name with no accompanying description
- (C) A scientific name with author's
- (D) A scientific name with collector's

2. Answer the following questions (any Six) 2 x 6 = 12

- a. Explain the rule of priority.
- b. What is the role of cytological characters in Plant taxonomy?
- c. Assign the following plants to their respective families.
 - i. *Euphorbia hirta*
 - ii. *Rauvolfia serpentina*
 - iii. *Colocasia esculenta*
 - iv. *Ageratum conyzoides*
- d. What is Basionym? Give two examples.
- e. Differentiate monophyly and polyphyly?
- f. Name any two taxonomic journals with their place of publications.
- g. What you do if you find that the holotype of a species is lost?

3. Write an Answer any *FOUR* of the following: $5 \times 4 = 20$
- Advanced characters of Gnetum
 - Bennettitales flower
 - ICN history
 - Botanical Survey of India
 - Advanced characters in family Orchidaceae
4. Answer the following questions (any Three) $3 \times 9 = 27$
- Define placentation. Write an account on different types of placentation in Angiosperm? $2+7=9$
 - Draw labeled diagram of L.S. of Gnetum ovule and describe. 9
 - Give an account characteristics, affinities and relationships of Cycadofilicales. 9
 - What is type concept? Write an account on different type methods used in plant taxonomy. $2+7=9$
5. Answer the following question (any One) 1×12
- Give an outline of a natural system classifications studied by you? Discuss merits and demerits of classification. $6+6=12$
 - Give an account on the phylogeny and affinities of Ranunculales? Discuss primitive characters of Ranunculales. $8+4=12$