

**2013**

**M.Sc.**

**2nd Semester Examination**

**BOTANY**

**PAPER—BOT-203**

Full Marks : 40

Time : 2 Hours

*The figures in the right-hand margin indicate full marks.*

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

*Illustrate the answers wherever necessary.*

**UNIT — I**

**(Pteridophytes)**

(Marks : 20)

1. Answer any *five* questions : 1×5
- (a) Write the generic names of two pteridophytes discovered from 'Rhynic chert' beds.
  - (b) Mention the nature of branching seen in the members of Zosterophylloprida.

(Turn Over)

- (c) What is 'Carnial Canal' ?
- (d) What is meant by 'incipient heterothallism' ?
- (e) What is *Selaginella* regarded as 'resurrection plant' ?
- (f) Mention two genera where characterized by apical annulus of sporangium.
- (g) What is meant by 'apoxogenesis' ?
- (h) What is meant by 'aerostochoid sorus' ?

2. Write short notes on any two of the following :  $2\frac{1}{2} \times 2$

- (a) *Asteroxylon* ;
- (b) Apogamy ;
- (c) Origin of 'microphyllous' leaves ; and
- (d) Economic importance of pteridophytes.

3. Answer any one of the following : 10

- (a) What is meant by bipolar growth habit and where does it occur? Discuss with suitable illustrations about the morpho-anatomical features and reproductive structures of an arborescent lycoposid.

2+4+4

- (b) Characterize Filicales. Give a comparative account of schizacacase, Gleicheniaceae, Cyatheaceae and Polypodiaceae with respect to their reproductive structures. 2+8

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**UNIT — II**

**(Gymnosperms)**

(Marks : 20)

4. Answer any *five* questions : 1×5
- (a) What is meant by Hydrasperman reproduction ?
  - (b) Write the name of a *Glossopteris* seedling. Mention its age.
  - (c) Write the name of a parasitic gymnosperm. Assign it to its family.
  - (d) Name the male and female fructifications of *Pentoxylon* plant.
  - (e) What is the basis of reconstruction of *Callisstrophyton* plant made by Rothwell ?
  - (f) Name one medicinally important gymnosperm mentioning the bioactive compound extracted from the plant.

- (g) Name the male and female organs of *Corystospermeaceae*.
- (h) Name the geologically oldest known genus where bifacial activity of cambium is found.

5. Write short notes on any *two* of the following :  $2\frac{1}{2} \times 2$

- (a) Distribution of 'extant cycads'.
- (b) *Caytonia*-fruit.
- (c) Gymnosperm as a 'source of resins'.
- (d) Shoot polymorphism of *Pentoxylon* plants.

6. Answer any *one* of the following :  $10 \times 1$

- (a) Characterize coniferales. Classify modern conifers into families mentioning the basis of the classification. Give a brief account regarding the geographic distribution of modern conifers.  $3+3+4$
- (b) Describe, with suitable illustrations, the different organ-genera of *Lyginopteris* plant. Mention the basis of its reconstruction.  $10$