

Roll No.

Total Pages : 4

11459/NH**BS/2111****DIVERSITY AND SYSTEMATICS OF
GYMNOSPERMS**

Paper-V

Semester-III

Time Allowed : 3 Hours] [Maximum Marks : 40

Note : The candidates are required to attempt **two** questions each from Sections A and B carrying 6 marks each and the entire Section C consisting of 8 short answer type questions carrying 2 marks each.

SECTION—A

1. Write down the diagnostic characters of Gymnosperms. Discuss the distribution of Gymnosperms in India. 6
2. (a) Give an outline of Sporne's classification system of Gymnosperms. 3
(b) Write down the classification and features of Glossopteris. 3
3. Define Pro-gymnosperms. Discuss their characters on the basis of relevant examples. 6
4. (a) Discuss the economic importance of Indian Gymnosperms. 3
(b) Give a brief account of cytology of Indian Gymnosperms. 3

SECTION—B

5. Describe the life cycle of genus *Cycas*. 6
6. Discuss the characteristic features of genus *Pinus*.
Describe its reproductive structures. 6
7. Explain the structure of staminate and ovulate strobilus of *Gnetum*. 6
8. Write a detailed note on morphology and anatomy of vegetative parts of *Ephedra*. 6

SECTION—C

9. Write short answers for the following : 8×2=16
 - (i) Differentiate between Gymnosperms and Pro-Gymnosperms.
 - (ii) What do you mean by Pycnoxylic wood?
 - (iii) List the salient features of *Williamsonia*.

- (iv) What do you mean by Cleavage and Rosette polyembryony?
- (v) Draw a well labeled diagram of transverse section of stem of *Gnetum*.
- (vi) Describe the features of ovule of *Ephedra*.
- (vii) What do you mean by Acicular leaves?
- (viii) Differentiate between *Gnetum* and *Ephedra*.