

2016

BOTANY

[Honours]

PAPER – II

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

[NEW SYLLABUS]

GROUP – A

1. Answer any *ten* questions of the following : 2×10
 - (a) What is horn wort ? Why it is called so ?
 - (b) What is prothallus ? State its functions.

- (c) Why bryophytes are called "Amphibian" plants ?
- (d) Why *Selaginella* is called resurrection plant ?
- (e) What is meant by telome trusses ?
- (f) Write the systematic position *Lepidodendron*.
- (g) Why Cycadofilicales are also called seed ferns ?
- (h) What is Index fossil ?
- (i) What is meant by "bars of Sanio" ?
- (j) Why *Gnetum* is included in the group chlamydospermopsida ?
- (k) What is amber ?
- (l) Why the endosperm of angiosperms is triploid ($3n$) in nature ?
- (m) What is meant by coal ball ?

- (n) What are intine and exine ?
- (o) Write the differences between archegonium of Gymnosperm and pteridophyta.

GROUP – B

Answer any five questions of the following : 8 × 5

2. Write down the classification of Bryophyta adopted by Proskauer (1957) up to class level. Briefly mention the class characters of such classification. 2 + 6
3. Write the morphological nature of rhizophore of *Selaginella*. Briefly write the external morphology of the vegetative organs of *Equisetum*. 4 + 4
4. Who introduced *glossopteris* to science ? Why the taxon is so named ? Describe with suitable illustrations the leaf and male fructification of *Glossopteris* plant. 1 + 1 + (3 + 3)
5. Write the distribution of *Ginkgo*. Mention its primitive features. Write its economic uses. 3 + 3 + 2

6. Write notes on : 4 + 4
- (i) Typical structure of embryosac.
- (ii) Photo synthetic tissue of bryophytes.
7. Describe the structure and development of cellular type of endosperm. 4 + 4
8. Classify pollen grains according to their shapes (based on the ratio of polar diameter and equatorial diameter). What is meant by clavate type of pollen sculpture? 6 + 2
9. Enumerate the plant life forms through different periods of Palaeozoic and Mesozoic eras. 8

GROUP – C

Answer any two of the following : 15 × 2

10. Write notes on : 5 + 5 + 5
- (i) Ecological & Economical Importance of bryophytes,

- (ii) Structure and development of *Funaria* sporophyte, and
- (iii) Progressive theory regarding the origin of bryophytes.

11. Write notes on : 5 + 5 + 5

- (i) *Rhynia* : its salient features, age, distribution and evolutionary and significance ;
- (ii) Economic importance of pteridophyts. and
- (iii) Telome theory and its importance regarding the establishment of megaphyllous leaves in Filicalian ferns.

12. Write notes on : 5 + 5 + 5

- (i) Outline of Gymnosperm classification (Stewart and Rothwell 1993)with examples ;
- (ii) Development of female gametophyte of *Pinus* ; and
- (iii) Types of fossils on the basis of their preservation.

13. Write notes on :

5 + 5 + 5

- (i) Role of palynology in delimiting the different plant taxonomic groups.
 - (ii) Branches of Palynology
 - (iii) Development of typical dicot embryo.
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