2015

BOTANY

[**Honours**]

PAPER – II (New)

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 meant by 'gemma cup' ?

(*b*) What is columella ? Mention the function of columella.

(*c*) Why *Sphagnum* is termed as 'bog mass' or 'peat moss' ?

(*d*) Mention the species of *Rhynia*. Write its age of occurence.

(*e*) Write the nature of sporangia *of Psilotum*.

(*f*) What is meant by 'over topping' in telome concept ?

(*g*) What is 'incipient heterospory' ?

(*h*) What is coralloid root ? Where does it occur ?

(*i*) What is meant by 'shower of sulfur' ?

(*j*) What is meant by 'ichnofossil' ?

(*k*) What is pollination drop ?

(*l*) What is meant by 'aperture' of a pollen grain ?

(*m*) What is meant by forensic palynology ?

(*Continued*)

(*n*) What is polyembryony ? Where does it occur ?

(*o*) Write briefly the nature of endosperm found in angiosperms.

GROUP – B

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

2. Write a comparative account regarding morpho -anatomical features of the thallus structure of *Marchantia* and *Anthoceros*. Describe the sporophytic structure of *Anthoceros*. $4 + 4$

3. What is bi-polar growth habit ? Where does it occur ? Illustrate the morpho-anatomical features of *Lepidodendron*. $2 + 1 + 5$

4. Characterize Cycadofilicales. Describe the different morphotaxa of a *Lyginopteris* plant. $3 + 5$

5. What is fossil ? Write the factors responsible for fossilization process. Describe in detail the process of formation of a petrified fossil. $1 + 3 + 4$

6. What is NPC classification of spores/pollen grains ? Who is the proponent of this classification ? Describe NPC system of classification to classify spores and/or pollen grains. 2 + 1 + 5

7. Describe the structure and development of helobial type of endosperm. 8

8. What is meant by protostele ? How does it differ from eustele ? Describe different stelar types found in differents species of *Lycopodium*. 2 + 1 + 5

9. Discuss the morphology of the ovuliferosis scale of *Pinus*. Mention the nature of dwarf shoot of *Pinus*. 6 + 2

GROUP – C

Answer any **two** of the following : 15 × 2

10. Write notes on : 5 + 5 + 5

(*i*) Bryophytes with reference to pollution monitoring and control

(*ii*) Structure and development of *Marchantia* sporphyte

(*iii*) Economic importance of bryophytes.

11. Write notes on : 5 + 5 + 5

(*i*) Progymnosperms

(*ii*) Gymnosperms and human health

(*iii*) Reproductive structures of *Equisetum*.

12. Write notes on : 5 + 5 + 5

(*i*) Radiocarbon dating to determine the age of rocks

(*ii*) Angiospermic characters of *Gnetum*

(*iii*) Structural details of *Williamsonia sewardiana*.

13. Write notes on : 5 + 5 + 5

(*i*) Melissopalynology

(*ii*) Wall ornamentations of pollen grains

(*iii*) Development of monocot embryo.
