

2024

(CBCS)

(6th Semester)

BOTANY

NINTH PAPER

(Pteridophytes, Gymnosperm, Paleobotany and Palynology)

Full Marks : 75

Time : 3 hours

*The figures in the margin indicate full marks for the questions***(SECTION : A—OBJECTIVE)**

(Marks : 10)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. Sporocarp is formed in

- (a) *Adiantum* () (b) *Ophioglossum* ()
 (c) *Lepidodendron* () (d) *Marsilea* ()

2. The genus *Rhynia* flourished during

- (a) Carboniferous period ()
 (b) Devonian period ()
 (c) Silurian period ()
 (d) Permian period ()

3. Maiden hair tree is

- (a) *Ginkgo* () (b) *Taxus* ()
 (c) *Ephedra* () (d) *Pinus* ()

4. C. J. Chamberlain classified gymnosperm based on
- phylogeny ()
 - morphology only ()
 - morphology and anatomy ()
 - anatomy only ()
5. Which of the following gymnosperms is considered to be a living fossil?
- Pinus roxburghii* ()
 - Taxus baccata* ()
 - Ginkgo biloba* ()
 - Gnetum ula* ()
6. Among gymnosperms, xylem vessels are present only in
- Ephedra* ()
 - Cycas* ()
 - Pinus* ()
 - Taxus* ()
7. Early flowering plants appeared around
- Proterozoic era ()
 - Cenozoic era ()
 - Mesozoic era ()
 - Palaeozoic era ()
8. Which one is known as fossil seed fern?
- Taxales ()
 - Cordaitales ()
 - Pteridospermales ()
 - Bennettitales ()
9. Exine is made up of
- sporopollenin ()
 - cellulose ()
 - suberin ()
 - nutritive tissue ()
10. The smallest pollen grain is found in
- Cucurbita* sp. ()
 - Myosotis* sp. ()
 - Mirabilis* sp. ()
 - Amaranthus* sp. ()

(SECTION : B—SHORT ANSWERS)

(Marks : 15)

Write short notes on the following :

3×5=15

UNIT—I

1. Morphological structure of leaves of *Ophioglossum*

OR

2. Distribution of *Calamites*

UNIT—II

3. Morphology of *Ephedra*

OR

4. Male strobilus of *Ginkgo*

UNIT—III

5. Economic importance of gymnosperms

OR

6. Structure of ovule in gymnosperms

UNIT—IV

7. Formation of fossil

OR

8. Reproductive structure of *Cordaites*

UNIT—V

9. Pollen allergy

OR

10. Role of pollen morphology in taxonomy

(SECTION : C—DESCRIPTIVE)

(Marks : 50)

Answer the following questions :

10×5=50

UNIT—I

1. Compare the morphology and reproduction of *Adiantum* and *Marsilea*. 10

OR

2. Briefly mention the following : 5+5=10

(a) Characteristics and distribution of *Rhynia*

(b) Fertile spike of *Ophioglossum*

UNIT—II

3. Write a note on the reproduction in *Ginkgo* with suitable diagram. 10

OR

4. Write short notes on the following : 5+5=10

(a) Female strobilus of *Taxus*

(b) Classification of gymnosperms

UNIT—III

5. Briefly discuss the phylogenetic trends in gymnosperms. 10

OR

6. Write brief notes on the following : 5+5=10

(a) General account of archegonia

(b) Distribution of living gymnosperms in India

UNIT—IV

7. What is fossil? Give an account of different types of fossils. 10

OR

8. Write short notes on the following : 5+5=10

(a) Features of *Lyginopteris*

(b) Gondwana flora

UNIT—V

9. Define palynology. Discuss pollen dispersal in time and space. 10

OR

10. Write short notes on the following : 5+5=10

(a) Pollen morphology

(b) Pollen production
