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(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. The genus *Lepidodendron* flourished during

(a) Carboniferous period ()

(b) Devonian period ()

(c) Silurian period ()

(d) Permian period ()

2. The fertile segment of *Ophioglossum* is present in

- (a) apex of lamina ()
- (b) abaxial surface of lamina ()
- (c) adaxial surface of lamina ()
- (d) None of the above ()

3. C. J. Chamberlain classified gymnosperm based on

- (a) phylogeny ()
- (b) morphology only ()
- (c) morphology and anatomy ()
- (d) anatomy only ()

4. Each microsporangium in *Ephedra* possesses 2–3 loculi (small chambers) which is often called

- (a) synergid ()
- (b) perianth ()
- (c) sporangium ()
- (d) synangia ()

5. Raizada and Sahni (1960) recorded _____ genera of living gymnosperm in India.

(a) 14 ()

(b) 16 ()

(c) 15 ()

(d) 18 ()

6. Among gymnosperm, xylem vessels are present only in

(a) *Ephedra* ()

(b) *Cycas* ()

(c) *Pinus* ()

(d) *Gnetum* ()

7. Early flowering plants appeared around

(a) Proterozoic era ()

(b) Cenozoic era ()

(c) Mesozoic era ()

(d) Palaeozoic era ()

8. Gondwana was named after the Gond kingdom of

- (a) Uttar Pradesh ()
- (b) Madhya Pradesh ()
- (c) Himachal Pradesh ()
- (d) Andhra Pradesh ()

9. Exine is made up of

- (a) sporopollenin ()
- (b) cellulose ()
- (c) suberin ()
- (d) nutritive tissue ()

10. Pollen allergy can cause

- (a) hay fever ()
- (b) dermatitis ()
- (c) asthma ()
- (d) All of the above ()

(SECTION : B—SHORT NOTE)

(Marks : 15)

Write short notes on the following :

3×5=15

UNIT—I

1. Morphology of *Adiantum*

OR

2. Characteristics of *Rhynia*

UNIT—II

3. Male strobilus of *Ephedra*

OR

4. Reproduction of *Ginkgo*

UNIT—III

5. Economic importance of gymnosperms

OR

6. General account of archaegonia

UNIT—IV

7. Main characteristics of Pteridospermales

OR

8. Features of *Lyginopteris*

UNIT—V

9. Pollen morphology

OR

10. Pollen production in time

(SECTION : C—DESCRIPTIVE)

(Marks : 50)

Answer the following questions :

10×5=50

UNIT—I

1. Discuss the morphology and reproduction of *Ophioglossum* along with diagrams. 10

OR

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

(a) Characteristics and distribution of *Calamites*

(b) Morphology of *Marsilea*

UNIT—II

3. Write a note on reproduction of *Taxus* along with suitable diagram. 10

OR

4. Write short notes on the following : 5×2=10

(a) Female strobilus of *Ephedra*

(b) Classification of gymnosperms

UNIT—III

5. Briefly discuss phylogenetic trends in gymnosperm. 10

OR

6. Write short notes on the following : 5×2=10

(a) Structure of ovule of gymnosperms

(b) Distribution of living gymnosperms in India

UNIT—IV

7. Write about geological timescale highlighting biological events of the plant kingdom. 10

OR

8. Write short notes on the following : 5×2=10
(a) Types of fossil
(b) Gondwana flora

UNIT—V

9. Define palynology and discuss pollen dispersal in space. 2+8=10

OR

10. Write short notes on the following : 5×2=10
(a) Role of pollen taxonomy
(b) Pollen allergy
