

2022

**BOTANY — HONOURS**

**Paper : CC-5**

**Full Marks : 50**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**1. Answer any five questions :**

- (a) Define ichno-fossil. Give an example. 1+1
- (b) What is sporopollenin? Mention its significance. 1+1
- (c) Name two commonly used radioisotopes for determining age of fossils. 1+1
- (d) Mention suffixes used for naming secondary xylem and seed of fossilised plants with examples. 1+1
- (e) From which geological ages (Periods) *Cooksonia* and *Lepidodendron* were reported? 1+1
- (f) Write the full name of the reconstructed fossil plant where interseminal scale is found. Who reconstructed the fossil? 1+1
- (g) What is a pollen-calendar? Mention one of its uses. 1+1
- (h) Write the NPC number of a monoporate pollen grain. 2

**2. Answer any two of the following :**

- (a) Write a short note on Aeropalynology and its applications. 5
- (b) Give an illustrated account of the leaf anatomy of the reconstructed genus *Cordaites*. 5
- (c) Describe the pollen wall stratification pattern following Gunnar Erdtman with necessary diagram. 5

**3. Answer any three of the following :**

- (a) Briefly describe the cellular permineralisation and coalified compression modes of fossil preservation following J. W. Schopf (1975). Add a brief note on the importance of fossil study. 3+3+4
- (b) Give an account of the three-fold division of Indian Gondwana system and mention major megafloal assemblages of each division. Mention the index or marker plant fossil of each division. 7+3
- (c) Name the different organ genera of the reconstructed plant *Calamites*. State the geological age of occurrence and geographical distribution of that fossil plant. Describe the different reproductive organs of *Calamites* with necessary diagrams. 2+2+6
- (d) Describe the wood anatomy, pollen and ovule bearing organs of the reconstructed plant *Lyginopteris* with labelled diagrams. 3+3+4
- (e) Mention the differences between spores and pollen grains. Describe the different types of exine ornamentations with suitable diagrams. 3+7