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 megafloral 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