

2019

BOTANY

(Major)

Paper : 2.1

(**Gymnosperms, Paleobotany and
Plant Anatomy**)

Full Marks : 60

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Answer the following : 1×7=7
- (a) What is cupule?
 - (b) What is aleurone grain?
 - (c) Give an example of surface fibre.
 - (d) What does 'sulphur dust' refer to?
 - (e) What are stigmatic appendages?
 - (f) What are tylosoids?
 - (g) What is prosenchyma?

2. Write the differences between any *four* of the following : $2 \times 4 = 8$

- (a) Vessels and Tracheids
- (b) Dwarf and Long shoots of *Pinus*
- (c) Collenchyma and Chlorenchyma
- (d) Simple pit and Bordered pit
- (e) Megasporophyll of *Cycas* and *Pinus*

3. Write on any *three* of the following : $5 \times 3 = 15$

- (a) Tunica-carpus theory
- (b) Angiospermic characters of *Gnetum*
- (c) Fructifications of Cordaites
- (d) Economic importance of *Pinus*

4. Answer the following questions : $10 \times 3 = 30$

- (a) What is secondary growth? Describe the intra-stelar secondary growth and nature of structures formed in the process in dicot stem. $2 + 8 = 10$

Or

What do you understand by tissue system? With the help of neat labelled diagrams, describe the vascular tissue system in detail. $2 + 8 = 10$

(3)

- (b) Why is *Ginkgo* called living fossil?
Describe its male and female strobili.

5+5=10

Or

Describe the evolution of male gametophytes with reference to the genera you have studied. 10

- (c) Write the distinguishing characteristics of Bennettitales. Describe the reproductive structure with special reference to *Williamsonia*. 6+4=10

Or

Who discovered *Rhynia* and from where? Discuss the external features and anatomy of different plant parts of *Rhynia*. 2+8=10
