

**3 SEM TDC BOT M 1**

**2021**

( Held in January/February, 2022 )

**BOTANY**

( Major )

Course : 301

( **Pteridophytes, Gymnosperms, Paleobotany** )

Full Marks : 48

Pass Marks : 14

Time : 2 hours

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

1. (a) Choose the correct answer : 1×3=3

(i) Sporophyte of pteridophytes are nutritionally independent / dependent of gametophytes.

(ii) Heterosporous pteridophytes always produce monoecious / dioecious gametophytes.

(iii) Rhizophores in *Selaginella* are positively / negatively geotrophic structures.

(b) Fill up the blanks : 1×2=2

(i) Granite is a type of \_\_\_\_\_ rock.

(ii) 'Tent-pole' is present in \_\_\_\_\_ of gymnosperm.

2. Write short notes on the following : 2+3+2+2=9

(a) Coralloid root

(b) Sporocarp of Marsilea

(c) Prothallus of fern

(d) Transfusion tissue

3. (a) What is heterospory? Describe with suitable sketches the gametophytes of any heterosporous pteridophyte that you have studied.

2+5=7

Or

Compare the strobili of *Lycopodium*, *Selaginella* and *Equisetum* with sketches.

5+2=7

(b) "*Gnetum* in its outward appearance and in its internal structure has almost reached the angiosperm level." Justify the statement with suitable illustrations.

3+4=7

( 3 )

Or

Give a comparative account of the female gametophytes of *Cycas* and *Pinus*. Give suitable diagrams in support of your answer.  $4+3=7$

4. Write explanatory notes on any *two* of the following (Give sketches where necessary) :

$5\frac{1}{2}\times 2=11$

- (a) Megasporophylls of *Cycas*
- (b) Wood of *Gnetum*
- (c) Alternation of generation in pteridophytes
- (d) Synangium of *Psilotum*

5. What are fossils? Give an account on different processes by which the plants became fossilised. Also, mention the names of different types of fossil.

$2+7=9$

Or

Give an account on each of the following :

$3\times 3=9$

- (a) Sphenophyllum
- (b) Cordaitales
- (c) Microsporangia of *Lyginopteris*

\*\*\*