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**3 SEM TDC BOT M 1**

**2018**

( November )

**BOTANY**

( Major )

Course : 301

**( Pteridophytes, Gymnosperms and Paleobotany )**

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

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

1. (a) Answer the following as directed :  $1 \times 5 = 5$

- (i) In eusporangiate ferns, a row or group of superficial cells divide to form an outer and inner layer of cells; the outer giving rise to the wall of the sporangium and the inner to the \_\_\_\_\_ tissue.

( Fill in the blank )

(ii) The type of alternation of generation in which the prothallus and the sporophytic rhizome being some what similar in appearance.

( Express in 1 word )

(iii) Except in gnetales, the xylem of gymnosperms lacks tracheids/tracheae/xylem parenchyma/wood fibre.

( Choose the correct answer )

(iv) Name the species of *Cycas* which is commonly found in the forests of Assam.

(v) Coal balls and silicified wood are the best examples of \_\_\_\_\_.

( Fill in the blank )

(b) Write short notes on the following (draw diagrams where necessary) :  $4+2+2=8$

(i) Sporocarp of *Marsilea*

(ii) Suspensor tier of *Pinus* embryology

(iii) Columella of *Hornea*

2. (a) Give an illustrated account of the evolution of sporophytes in pteridophytes. Which one of them is highly evolved and why?

$5+1+1=7$

( 3 )

Or

With suitable diagrams, describe the various types of stele found in *Lycopodium*. 3+4=7

- (b) Give an account of the affinities of pteridophytes with other group of plants. 7

Or

Give a comparative account of the sporangiferous spike of *Selaginella* and *Equisetum* with sketches. 4+3=7

3. Answer/Write explanatory notes on any two of the following (draw diagrams where necessary) : 6×2=12

(a) "Ginkgoales were descendant from Cordaitales." Justify the statement.

(b) Resemblance of *Gnetum* with angiosperms

(c) Development of male gametophyte of *Cycas*

(d) Morphological nature of the ovuliferous scale of *Pinus*

4. Write short notes on the following (draw diagrams where necessary) : 3×3=9

- (a) Vegetation of Mesozoic Era
- (b) Fructification of *Sphenophyllum*
- (c) Internal structure of *Psilophyton* stem

Or

What are fossils? Give an account of the processes of fossilization. 2+7=9

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