



# UNIVERSITY OF THE PUNJAB

Fifth Semester – 2019

**Examination: B.S. 4 Years Program**

Roll No. in Fig. ....

Roll No. in Words. ....

**PAPER: Evolutionary Trends in Trachaeophytes**  
**Course Code: BOT-305 Part-I (Compulsory)**

**MAX. TIME: 15 Min.**  
**MAX. MARKS: 10**

.....  
Signature of Supdt.:

**Attempt this Paper on this Question Sheet only.**

**Please encircle the correct option. Division of marks is given in front of each question.**

**This Paper will be collected back after expiry of time limit mentioned above.**

**Q.1. Encircle the right answer, cutting and overwriting is not allowed. (1x10=10)**

- 1) The plant having xylem and phloem originated in the  
a. Devonian      b. Ordovician      c. Silurian      d. Cambrian
- 2) Which of the following is called **Living Fossil**?  
a. *Ephedra*      b. *Pinus*      c. *Cycas*      d. *Ginkgo*
- 3) The **sporangia** in early Vascular Land Plants are;  
a. Lateral      b. Terminal      c. Axillary      d. Both a & b
- 4) *Cooksonia* belongs to group;  
a. Rhyniophyta      b. Zosterophyllophyta      c. Psilophyta      d. Lycophyta
- 5) First **true seeds** appeared in  
a. Seed Ferns      b. Progymnosperms      c. Gymnosperms      d. Angiosperms
- 6) Catapult mechanism of dehiscence was present in;  
a. Eusporangia      b. Leptosprangia      c. Both a&b      d. None
- 7) Earliest known **Lycopsids** are included in;  
a. Drepanophycales      b. Ophioglosales      c. Gnetales  
d. *Ranales*
- 8) Stems mostly equipped with ridges and furrows are characteristic for;  
a. Ferns      b. *Dioon*      c. Sphenopsids      d. *Abies*
- 9) **Trilete Spores** are those having;  
a. Triradial germlinal suture      b. Smooth exine      c. Large apertures  
d. Pores
- 10) **Maiden hair fern** is the other name for;  
a. *Selaginella*      b. *Psilotum*      c. *Adiantum*      d. None of them



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Roll No. ....

**PAPER: Evolutionary Trends in Tracheophytes**

**Course Code: BOT-305 Part – II**

**MAX. TIME: 2 Hrs. 45 Min.**

**MAX. MARKS: 50**

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Q.2. Questions with short answers.**

**(10 x 2 = 20)**

- i. Define Tracheophytes.
- ii. Give examples of **LIGULATE LYCOPHYTES**.
- iii. Define **HETEROSPORY**. What is its importance?
- iv. Enlist any four synthetic characters of **PSILOPHYTA**.
- v. How do **TRILETE SPORES** differ from **MONOLETE** and **ALETE SPORES**?
- vi. Enlist 5 general features of **CYCADALES**.
- vii. What is the importance of “**Rhynie Chert Plants**”?
- viii. Highlight any **four** synthetic characters of **Gymnosperms**.
- ix. Differentiate between **Microphylls** and **Megaphylls**.
- x. Differentiate between **Protostele** and **Siphonostele**.

**Q.3. Questions with brief answers.**

**(3 x 10 = 30)**

1. Highlight the Synthetic Characters of **PSEUDOBORNIALES** and **PLEUROMIALES** along with their **EVOLUTIONARY IMPLICATIONS**. Give examples. (10 marks)
2. How **ANGIOSPERMS** were evolved? Justify your answer with different theories. (10 marks)
3. Compare and Contrast **CONIFERALES** and **GNETALES**. (10 marks)