



UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Sixth Semester – 2020

Paper: Plant Anatomy (Advance Course)

Course Code: BOT-311 Part – I (Compulsory)

Time: 15 Min. Marks: 10

Roll No. in Fig.

Roll No. in Words.

Signature of Supdt.:

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.

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 correct choice.

(10x1=10)

1- What is the derivative of procambium?

- a) Root cap
- b) Vascular tissues
- c) Pith and cortex
- d) Epidermis

2- The role of pectin in the primary cell wall is to

- a) Reinforce the cellulose in the wall
- b) Make the wall transparent
- c) Transport precursors to the developing cell wall
- d) Glue adjacent cells together

3- The primary function of intercellular spaces in most plant tissues is to

- a) Allow for the movement of organic compounds
- b) Provide space for the addition of secondary wall materials to cells
- c) Facilitate gaseous exchange of cells
- d) Maintain turgor pressure

4- Sclereids develop from

- a) Fibers
- b) Parenchyma cells
- c) collenchyma cells
- d) Apical meristems

5- In gymnosperms, _____ serve the same role as the angiosperm companion cells.

- a) Sieve tube elements
- b) Sieve cells
- c) Albuminous cells
- d) Parenchyma

- 6- Leaves with stomata on only the adaxial side are referred to as
- a) Amphistomatous
 - b) Hyperstomatic
 - c) Epistomatous
 - d) Mesostomatous
- 7- The root vascular cambium arises from the
- a) Endodermis
 - b) Pericycle
 - c) Phellogen
 - d) Exodermis
- 8- Herbaceous stems differ from woody stems in that
- a) Herbaceous stems only show secondary growth
 - b) Herbaceous stems are only found in monocots.
 - c) Herbaceous refers to monocots. woody refers to eudicots
 - d) Herbaceous stems rarely show secondary growth
- 9- The main function of phloem is to
- a) Translocate photosynthates
 - b) Provide water for transpiration
 - c) Store carbohydrates for use during the winter
 - d) Store water for use during arid periods.
- 10- The male reproductive part of a flower contains two round shaped structures at their tip.
These structures are known as
- a) Anthers
 - b) Filaments
 - c) Stamens
 - d) Carpels



ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q. No. 2: Give brief answers of following questions. (2 x 10)

- 1- Differentiate between tap and adventitious roots.
- 2- Differentiate between fusiform and ray initials.
- 3- Differentiate between sap and heart woods.
- 4- Differentiate between apical and intercalary meristems.
- 5- Differentiate between protoderm and procambium.
- 6- Differentiate between anomocytic and anisocytic stomata.
- 7- Differentiate between periclinal and anticlinal divisions.
- 8- Differentiate between compound and simple leaf.
- 9- What are the male and female reproductive parts of a flower?
- 10- What is double fertilization?

Q. No. 3: Answer the following Questions.

(3x10=30)

- i.** What is secondary growth? Briefly describe secondary growth of stem with the help of diagram.
- ii.** What are the stomata? Briefly describe its structure, types and functions with the help of diagram.
- iii.** What is meant by Axial and Ray systems in secondary xylem? Explain in detail.