



UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Sixth Semester – 2019

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.

(1x10=10)

Q. No. 1: Fill in the blanks with suitable terms. (10)

1. In dicotyledonous stems, the ----- is a multilayered zone found in between the endodermis and the vascular bundles.
(a). Vascular cambium (b). Exodermis
(c). cortex (d). Pericycle
2. Vascular bundles in a ----- stem are conjoint, collateral or bicollateral and open.
(a). monocot (b). dicot
(c). both a & b (d). none of these
3. The term ----- is applied to gymnosperm wood, that of ----- to the dicotyledonous wood.
(a). softwood, hardwood (b). Hardwood, softwood
(c). Heart wood, sap wood (d). Early wood, late wood
4. The flattened petiole which looks like ordinary leaf is called -----.
(a). Gland (b). phyllode
(c). Stinging hair (d). Papilla
5. A leaf in which palisade parenchyma is present on both abaxial and adaxial leaf surfaces is termed as -----.
(a). Bifacial leaf (b). Isobilateral leaf
(c). Dorsiventral (d). Foliage

P.T.O.

6. The ----- are cells or series of connected cells that contain latex, a fluid of complex composition.
- (a). trichomes (b). laticifers
(c). lenticels (d). Phelloderm
7. Guttation is a process characteristic to -----.
- (a). Nectaries (b). Laticifers
(c). Hydathodes (d). Resin ducts
8. ----- is the first or lowermost whorl of the flower.
- (a). Corolla (b). Calyx
(c). Androecium (d). Gynoecium
9. In ----- type of xylem, the development of the xylem takes place toward periphery of the axis or protoxylem elements develop towards the centre.
- (a). endarch (b). exarch
(c). mesarch (d). Both a & b
10. The earlier increments of secondary xylem gradually become non-functional in conduction and storage. The relative amount of the non-functioning wood is called -----.
- (a). Heartwood (b). Sapwood
(c). softwood (d). none of these



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Paper: Plant Anatomy (Advance Course)
Course Code: BOT-311 Part – II

Time: 2 Hrs. 45 Min. Marks: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

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

1. What is an ovule? What are its different types?
2. Define Reaction wood. What are its different types?
3. Define Histogen theory. Who proposed this theory?
4. Give comparison of monocot and dicot stems.
5. Differentiate between vessel members and tracheids.
6. What is meant by Leaf Abscission?
7. What is periderm? How is it formed?
8. What is meant by 'Guttation'? How it is linked with 'Hydathodes'?
9. Why the heartwood is darker in color than sap wood?
10. What is Anomalous Secondary Growth?

SECTION III

Q. No. 3: What is a stele? Describe its different types. (10)

Q. No. 4: Discuss secondary growth in dicot stem. (10)

Q. No. 5: What is meant by Axial and Ray systems in Secondary xylem? Explain in detail. (10)