

Bago University
Department of Botany
First Semester Examination, March, 2019

Third Year (B.Sc.)
Botany Specialization
Answer All Questions

Bot.3102
Plant Cytology and Anatomy
Time allowed: (3) Hours

I. Determine whether each statement is TRUE or FALSE. (10 marks)

1. The largest organisms are made up of billions of cells.
2. Eukaryotic cells lack a membrane-bound nucleus.
3. Lysosomes are common in the animal cells.
4. The thylakoids are stacked on top of one another to form a column called a granum.
5. Crystals are the waste-products of the metabolic processes of the cells.
6. Lipids substances are found in the cytoplasm and plastids.
7. The cortex of dicot stem is also primary meristem.
8. Secondary meristems are always apical in position.
9. In a transverse section of a woody trunk, the light coloured region is called sap wood.
10. Each stoma is composed of two bean shaped cells known as subsidiary cells.

II. Write correct word to complete the following sentences. (10 marks)

1. Cells are the universal elementary units of ----- structure.
2. The mitochondria inner membrane has many long folds, known as -----.
3. The material in which the ----- a located is called the stroma.
4. A ----- contains cell sap with dissolved atmospheric gases, mineral, sugar etc.
5. Small ----- crystals are also called crystal sand.
6. Cell wall is ----- and gives plant cells a very define shape.
7. ----- are conspicuous features of mature cell wall structure.
8. Procambium meristem gives rise to the ----- tissue system.
9. In flowering plants, tracheids and vessels are the main water ----- tissues.
10. The ----- help in preventing water loss due to transpiration.

III. Answer all questions. (10 marks)

1. Define plant cytology and anatomy.
2. State the two groups of cellular phenomena.
3. What is the meant by the "Cytosol"?
4. Clarify the epidermal appendages.
5. Differences between "endarch and exarch" by primary xylem.

IV. Answer all questions. (20 marks)

1. Write about the cell theory.
2. Give notes on chemical nature of the cell wall.
3. Draw and label of shoot tip meristem.
4. Differences between palisade and spongy parenchyma of dicot leaf.

V. Answer any three questions. (30 marks)

1. Give the explanation of the Nature and Diversity of cells.
2. Briefly discuss the plastids.
3. Explain the classification of meristem based on position.
4. Describe the water conduction tissue.
5. Explain with diagram of conjoint type of vascular bundle.