

Navrachana University
School of Liberal Studies and Education, B.Sc Program
End-Semester Examination November 2017
Second Year and Semester III
Plant Structural Biology, BO202

Date: 22/11/2017

Time: 3:30 pm to 5:30 pm

Marks: 40

Important Instructions

1. All the Questions are Compulsory
 2. Total Pages: 2
 3. Please read the questions carefully and answer accordingly
 4. Draw a neat and labeled diagram wherever necessary
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Q. 1. (a) Choose the correct answer from the given options: (0.5x6=3)

1. Given below are the various types of tissue and their functions. Which out of these is not a matching pair:
 - a) Collenchyma : provides mechanical support to the growing parts of plant.
 - b) Sclerenchyma : photosynthesis, storage and secretion.
 - c) Chlorenchyma : perform the function of photosynthesis.
 - d) Xylem : conduction of water and minerals.
2. Survival of plants in terrestrial environment has been made possible by the presence of
 - a) intercalary meristem
 - b) conducting tissues
 - c) apical meristem
 - d) parenchymatous cells
3. Husk of coconut is made up of
 - a) xylem
 - b) sclerenchyma
 - c) parenchyma
 - d) phloem
4. Youngest layer of secondary xylem in wood of dicot stem is located just
 - a) outside the cambium
 - b) inside the cambium
 - c) outside pith
 - d) inside the cortex
5. Normal secondary growth occurs in
 - a) dicot stem
 - b) monocot stem
 - c) both a and b
 - d) roots
6. In roots and stems, secondary growth takes place after the formation of
 - a) cambium
 - b) sclerenchyma
 - c) cork
 - d) bark

Q.1. (b) Answer in one sentence (1x6=6)

1. The lawn grass (*Cyanodon dactylon*) needs to be mowed frequently to prevent its overgrowth. Which tissue is responsible for its rapid growth?
2. Name the meristem which is responsible for growth in diameter of the cortex.

3. What are the three major polysaccharides found in the primary cell wall?
4. What do you mean by anomalous secondary growth?
5. Which type of stomata do you find in monocots?
6. What is middle lamella?

Q. 2. Answer in brief (Any 5)

(2x5=10)

1. Why is cambium considered to be lateral meristem?
2. What is the main difference between meristematic and permanent tissues?
3. How are the stomatas different in angiosperms?
4. Mention any two differences between cork cambium and vascular cambium.
5. Explain the terms phellem and phelloderm.
6. What is middle lamella? Give its role in cell wall
7. Usually shrubs and herbs grow in open places and are exposed to forceful winds, but they do not break. Why?

Q. 3. Write Short Notes on (Any 3):

(3x3= 9)

1. Periderm
2. Promeristem
3. Glandular trichomes
4. Plant tissue system that help in conduction

Q.4. Answer in detail (Any 2)

(4x2=8)

1. Give reasons for
 - (a) Meristematic cells have a prominent nucleus and dense cytoplasm but they lack vacuole.
 - (b) We get a crunchy and granular feeling when we chew pear fruit.
 - (c) Branches of a tree move and bend freely in high wind velocity.
 - (d) It is difficult to pull out the husk of a coconut tree.
2. Suppose you are examining a cross section of a leaf under compound microscope, how would you determine whether it is monocot stem or dicot stem?
3. Explain the process of secondary growth in the stems of woody angiosperms with the help of schematic diagrams. What is its significance?

Q. 5. How is plant anatomy important in herbal medicine?

(2)

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