

Navrachana University
School of Liberal Studies and Education, B.Sc Program
End- Semester Examination November 2017
Second Year and Semester III
Plant structural biology and Physiology, BO204

Date: 23.11.17

Time: 3:30 pm – 5:30 pm

Marks: 40

Instructions:

- All the Questions are Compulsory
- Total pages - 2
- Please read the questions carefully and answer accordingly
- Draw a neat and labeled diagram wherever necessary

Q. 1 (a) Choose the correct answer from the given options:**(1x6=6)**

1. On cool nights, following sultry days, water is found at the tips and margins of tomato leaves in the form of dew drops. Every drop marks the location of
a) stomata b) lenticels c) hydathode d) trichome
2. Which of the following is a living mechanical tissue
a) collenchyma b) sclerenchyma c) xylem d) phloem
3. Wilting of leaves in hot weather at noon is due to
a) lack of water absorption b) excessive water absorption
c) excessive transpiration d) excess of transpiration in comparison to absorption
4. Leaves of monocot plants grow from
a) apical meristem b) lateral meristem c) intercalary meristem d) secondary meristem
5. In rainy season, wooden doors are hard to close because of
a) osmosis b) diffusion c) imbibition d) plasmolysis
6. Which of the enzyme has dual role
a) PEP carboxylase b) RuBisCo c) Phosphorylase d) Aldolase

Q. 1 (b) Give the scientific term for the following statements/processes:**(1x4=4)**

- (a) Movement of water in roots through the cell wall exclusively.
- (b) A solution having relatively less concentration
- (c) Loss of water from the aerial parts of the plants in the form of water vapour.
- (d) Water loss in its liquid phase through the special openings of veins near the tip of leaves of many herbaceous plants.

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

1. What makes the raisins to swell up when kept in water?
2. What will happen to water potential when a solute is added to water?
3. A plant cell when kept in a solution got plasmolysed. What was the nature of the solution?
4. Do different species of plants growing in the same soil show the same rate of transpiration of a particular time? Justify your answer.
5. How many molecules of ATP are required for synthesis of one molecule of glucose in C₃ and C₄ pathways?
6. Where does Calvin cycle occur?

Q. 2. Answer in brief (Any 4)

(2x4=8)

1. If the potted plant is covered with a glass jar, water vapours appear on the wall of glass jar. Explain why?
2. Write the deficiency symptoms of the following two elements : Phosphorus and magnesium
3. What induces ethylene formation in plants? Give any two different action of ethylene on plants.
4. What are the growth tissues of plants? How are they classified and where can they be found?
5. Why do some plants adapted to a dry environment open their stomata only at night?
6. What is respiration? How anaerobic respiration differs from aerobic respiration?

Q. 3. Write Short Notes on (Any 2):

(3x2=6)

1. Plasmolysis
2. Lock and key mechanism of enzymes
3. Characters of naked seed bearing plants

Q.4. Answer in detail (Any 2)

(4x2=8)

1. Give an account of carbon fixation mechanism in C_4 plants.
2. Discuss the types of tissue system.
3. Describe the adaptations of plants to lower the transpiration rate. Why is transpiration considered as a necessary evil?

Q.5. Discuss the role of phytohormones used by farmers and green grocers to increase the yield of crops.

(2)

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