

Navrachana University
School of Liberal Studies and Education, B.Sc Program
End-Semester Examination November 2017
Third Year Semester V
Plant Physiology and Biochemistry - BO 301

Date: 20/11/2017
 Time: 1.00 – 3.00 PM

Marks: 40

Instructions:

- Write each answer on a new page
- Total no of pages = 2
- Draw a neat and labeled diagram wherever necessary

Q1. Choose the correct answer from the given options:**(1X10=10 Marks)**

1. Plants require Fe and Mg for _____
 - a) Synthesis of chlorophyll
 - b) Translocation of carbohydrates
 - c) Opening and closing of stomata
 - d) None of these
2. Sugar moves in phloem vessels as _____
 - a) Cellulose
 - b) Glucose
 - c) Starch
 - d) Sucrose
3. Plant movements in response to touch is known as _____
 - a) Phototropism
 - b) Thigmotropism
 - c) Gravitropism
 - d) photonasty
4. All are synthetic auxins except _____
 - a) NAA
 - b) IAA
 - c) 2,4-D
 - d) 2,4,5-T
5. Alkaloids are naturally occurring compounds that contain _____ in their molecules
 - a) One or more nitrogen atoms
 - b) Two heterocyclic rings
 - c) one or more O atoms
 - d) benzene ring with a side chain
6. Stereoisomers differing in their configuration at only one chiral carbon atom are called
 - a) Epimers
 - b) Anomers
 - c) enantiomers
 - d) polymers
7. _____ promotes senescence in plants
 - a) Cytokinins
 - b) Gibberelins
 - c) Abscissic acid
 - d) Ethylene
8. Guttation takes place through _____
 - a) Lenticels
 - b) Stomata
 - c) Hydathodes
 - d) Bulliform cells
9. _____ is a sulphur containing amino acid
 - a) Glutamic acid
 - b) Aspartic acid
 - c) Lysine
 - d) Methionine
10. C4 acid is converted to C3 in the _____ cells
 - a) Mesophyll
 - b) Bundle sheath
 - c) Stomatal
 - d) Epidermal

Q2. State with justification if the following statements are true or false

(1X6= 6 Marks)

1. Absorption of water is retarded in poorly aerated soils.
2. Abscisic acid is involved in internode elongation.
3. Carnitine is involved in transportation of acyl CoA into mitochondria.
4. Photorespiration involves the Calvin's cycle.
5. Glycolysis is conversion of glucose to lactate.
6. Capsaicin is a phenolic compound

Q3. Answer in brief (Any four)

(3X4=12 Marks)

1. Write the functions of any two micronutrients
2. What are the structural components involved in Photoassimilate translocation?
3. Avena coleoptile test is used to detect the activity of hormone A. Name the hormone and its role in curvature of the coleoptiles
4. There are two monosaccharides which differ from each other in configuration around a single carbon atom other than the anomeric carbon atom. Name the type of isomerism. State an example.
5. What are the factors affecting photosynthesis? Name any two.
6. What are tropic movements. Discuss its types.

Q4. Answer in detail (Any two)

(5X2=10 Marks)

1. Discuss the types of transpiration in plants.
2. Discuss the GS and GOGAT cycle.
3. Describe the bioassay of gibberellins.
4. Discuss the classification of carbohydrates.

Q5. A population of rice plants shows stunted growth. They were sprayed with a growth regulator to regain the plant height. Name the hormone. How does it overcome stunted growth.

(2X1=2 Marks)

-----End of Question Paper-----