Salahaddin University – Erbil College of Education Department of Biology



Subject: Plant physiology Stage: 4th Time: 2 hrs. Date: / / 2023

Final Examination- 2nd Semester, _____

_Sitting (2022-2023)

Q1// Fill the following blanks: (20 marks)

- 1. Conversion of ammonia to nitrite and then nitrate is known as
- 2. The two ways of representing growth rates are and
- 3. *Auxin* is a Greek word derived from *auxein*, which means
- 4. The first common natural cytokinin identified was purified from immature maize kernels and named
- 5. The amino acid methionine is the precursor of
- 6. Phytochrome consists of two elements and
- 7. Micronutrients are those elements essential for plant growth which needed in only very small quantities. These elements are sometimes called
- 8. is the conversion of an element from an organic form to an inorganic state as a result of microbial activity.

- 1. Log phase is the initial phase of growth when the rate of growth is very slow.
- 2. The mechanism of IAA polar transport involves a pH difference across the cell membrane allowing the movement of IAA into the cell.
- 3. One of the most prominent effects of Abscisic acid is the elongation of genetically dwarf (mutant) varieties of plants.
- 4. In short-day plants, Pfr induces flowering and hence flowering requires low levels of Pfr.
- 5. Chlorosis is the loss of chlorophyll resulting in the yellowing of leaves.
- 6. Gibberillic acid discovered as a bacterial compound that enhances rice growth but reduce seed production.
- 7. Abscisic acid plays an important role in plants during water stress and drought conditions.
- 8. Carbon, Hydrogen and Oxygen constitute about 56% of the total dry matter of plants.
- 9. The ammonia and urea present in the soil are indirectly absorbed by plants.
- 10. The conversion of nitrates into nitrogen gas which is then released into the atmosphere called nitrification.

Q3// Choose correct answer (5 marks)

- 1. Lateral roots arise from the
- a. Pericycle b. Vascular cambium c. Cork cambium
- 2.was the first artificial cytokinin to be discovered.
- a. Adenine b. Kinetin c. dormin
- 3. Appearances of patches of green and non-green on the leaves.a. Necrosisb. Abscissionc. Mottling
- 4. Nitrogen, Phosphorus and Sulphur are considered as
- a. Protoplasmic elements b. Balancing elements c. Framework elements
- 5. involved in enzyme activation and electron transfer a. Phosphor b. Iron c. Carbon

Q4// Answer the following: (20 marks)

- 1. What are the criteria of Essential element?
- 2. The Triple Response of Ethylene
- 3. Write the forms of phytochrome in detail
- 4. What is Ammonification?
- 5. Cytokinins as anti-aging hormones. Explain

Q5// A. Write the differences between Active transport, Diffusion and Facilitated diffusion. (Only by draw and label). (10 marks)

B. Draw the diagram of Gibberellin biosynthesis until GA12 (10 marks)

Q6// Count only (15 marks)

- 1. Groups of mineral nutrients
- 2. Deficiency symptoms of mineral nutrients
- 3. Primary classes of plant hormones
- 4. Soil composition
- 5. Plant Growth is measured by a variety of parameters. Counts