

ARS Main Descriptive Previous Questions - Biochemistry (Plant Science)

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Previous question papers

1. Discuss the structural features of nitrogenase complex.

What is the mechanism by which it reduces atmospheric nitrogen?

How is this biologically fixed nitrogen assimilated by diazotrophs?

2. Illustrate

a) Antisense RNA technology has been used for crop improvement

b) Heterologous gene transfer has been used to confer: resistance to insects

3. a) Describe the mechanism of action of enzymes with particular reference to chymotrypsin.

b) How do the allosteric enzymes count their regulatory action?

4. a) What is immune system? How is a causative organism resisted by this system?

b) State the conclusion that can be drawn from the antigen-antibody interaction.

5. Why is photo-respiration said to be a seemingly wasteful process?

How is this circumvented by Sugarcane and Maize plants?

Why do these plants possess higher productivity, water-use efficiency and N-use efficiency.

6. a) Outline the biosynthetic pathway of any two of the essential amino acids.

b) How is the Urea cycle linked to the TCA cycle?

c) "Plants can be grown on acetate or other compounds that yield acetyl Co A"-How?

7. What are Cytokinins?

Discuss their biosynthesis, physiological role and mechanism of their action in plants

8. Briefly describe capping and splicing of mRNA

9. Write short notes on :

a) Western blotting

b) ELISA

c) Immuno –fluorescence techniques?

10. What are the basic principles of electrophoresis? Discuss briefly the various electrophoretic methods applicable in biochemical analysis.