

PAPER - 404

Long Question :

1. Briefly explain the mechanism of biotic stress and its tolerance in plants.
2. Describe the salinity stress and its resistance in plants.
3. Explain the mechanism of action and physiological effects of gibberellin.
4. Describe briefly the mechanism of action and physiological effects of Cytokinin.
5. Write a note on application of growth regulators in agriculture and horticulture.
6. Describe the mechanism of transport of molecules across membrane and add a note on ATP hydrolysis.
7. What are Essential nutrients ? Describe the essential nutrients and their deficiencies in plant disorders.
8. Describe the techniques used in nutritional studies of plant growth system.
9. Explain the methods and applications of UV - VIS spectrophotometry .
10. Briefly explain the techniques and mechanical action of SDS-PAGE gel electrophoresis.
11. Describe briefly the fluorescence transient analysis by using PEA.
12. Describe the techniques and methods of uses of chromatography.
13. What is IRGA . Describe the instrumentation and application of IRGA .
14. Briefly explain the mechanism of abiotic stress and its tolerance in plants.
15. Describe briefly the mechanism of action and physiological effects of Auxin.
16. Describe briefly the mechanism of action and physiological effects of Ethylene.
17. Describe briefly the mechanism of action and physiological effects of ABA.
18. What is biological clock? Give brief illustration of circadian rhythm in relation to biological clock.

19. Describe briefly the mechanism of photoperiodism in terms of flowering .
20. what is vernalisation and its role in flowering plants.
21. Briefly describe instrumental principle and application of microscopy.
22. Briefly describe instrumental principle and application of GCMS.
23. Describe the pathways of auxins and it's the physiological effect.
24. Describe the polar auxin transport mechanism in details.
25. What is chemiosmotic model? Describe in details.
26. Describe the auxin signaling pathway in plants.
27. What are Gibberellins? Discuss their physiological effect and mechanism of action in higher plants.
28. What is ABA? Discuss their physiological effect and mechanism of action in stomata of higher plants.
29. What are growth regulators? Briefly describe the applications of growth regulators in agriculture and horticulture.

Short Question :.

(2 Mark / 3 Mark)

1. Stress responsive protein.
2. PH meter
3. Freezing stress.
4. secondary transporters
5. Biological clock.
6. Mass spectrometry
7. circadian rhythm.
8. Fluorescence spectrometer
9. Nutrient film growth.
10. Flow cytometry

11. Give a difference between auxin efflux and influx. Describe the role of proteins that involved in the efflux and influx mechanism of auxin.
12. Write a note on biological clock and endogenous clock.
13. Write a note on physiology of flowering.
14. What are auxins?
15. What are cytokinins?
16. What is Richmond-Lang effect?
17. What are gibberellins?
18. What is abscissic acid and why it is known as antigibberellin?
19. Mention some of the physiological effects of auxin.
20. Explain the role of gibberellins in bolting and flowering in long-day plants.
21. Mention some of the applications of gibberellins.
22. What are the major roles of cytokinin?
23. What is the role of ethylene as a plant growth regulator?

Fill in the Blanks :

1. UV - Spectroscopy Working on ____ phenomenon.
2. For the separation of DNA by electrophoresis _____ method is commonly used.
3. In SDS - PAGE the " SDS" used is _____.
4. Electrophoresis is not used for separation of _____.
5. The role of APS in SDS - PAGE is to _____.
6. The tracking dye used in SDS - PAGE will be _____.
7. cytochrome is _____.
8. _____ elements required by plants for uptake and utilisation of calcium and carbohydrates translocation.
9. Water splitting in photosynthesis occurs due to _____ mineral
10. Die- back of shoot occur due to deficiency of _____ mineral.
11. A widely used rooting hormone is _____.

12. Formation of the nodule is induced by _____ hormone.
13. The leaf defoliated utilized as "Agent orange" was _____ derivatives of hormone Auxin.
14. chlorosis is caused due to deficiency of _____ elements
15. which element play role in stomatal openings_____

Multiple choice questions

1. Gibberellins were first discovered from
- (a) algae
 - (b) fungi
 - (c) angiosperms
 - (d) bacteria
2. Dwarf plants can be made taller by
- (a) gibberellins
 - (b) auxin
 - (c) cytokinin
 - (d) vernalin
3. High concentration of synthetic auxins would
- (a) kill the plants
 - (b) prevent lateral buds from growing
 - (c) control cell division
 - (d) cause phototropism
4. Which one of the following is known to induce flowering in pineapple?
- (a) Ethylene
 - (b) ABA
 - (c) Gibberellins
 - (d) Cytokinins
5. The ripening of fruit can be hastened by treatment with
- (a) gibberellic acid
 - (b) indole acetic acid

- (c) florigen
- (d) ethylene gas

6. The growth regulator that retards ageing of plant organ is

- (a) auxin
- (b) gibberellins
- (c) cytokinin
- (d) abscisic acid

7. In plants auxin synthesis occurs in

- (a) cortex
- (b) phloem cells
- (c) root and shoot tips
- (d) xylem cells

8. Apical dominance is caused by

- (a) auxin
- (b) gibberellins
- (c) Kinetin
- (d) ABA

9. Hormone used in early ripening of fruit is

- (a) auxin
- (b) ABA
- (c) ethylene gas
- (d) cytokinin

10. Induction of cell division and delay in senescence is due to

- (a) cytokinin
- (b) Kinetin
- (c) gibberellins
- (d) auxin