

CLASS XI, BIO CH-13

MCQ Set 1

1. What is the sum of the processes of growth and differentiation called?
 - a) Dedifferentiation
 - b) Development
 - c) Redifferentiation
 - d) Plasticity
2. The capacity for unlimited growth in plants is due to the presence of:
 - a) Differentiated cells
 - b) Meristems
 - c) Sclerenchyma
 - d) Parenchyma
3. Which phase of growth involves increased vacuolation and cell enlargement?
 - a) Meristematic
 - b) Elongation
 - c) Maturation
 - d) Stationary
4. In arithmetic growth, after mitotic cell division:
 - a) Both daughter cells continue to divide
 - b) Only one daughter cell continues to divide
 - c) Both daughter cells differentiate immediately
 - d) Cell division stops
5. A typical sigmoid growth curve is a characteristic of:
 - a) Only arithmetic growth
 - b) Only geometrical growth in a closed system
 - c) Living organisms in a natural environment
 - d) Non-living systems
6. The growth rate expressed per unit initial parameter is called:
 - a) Absolute Growth Rate
 - b) Relative Growth Rate
 - c) Exponential Growth Rate
 - d) Linear Growth Rate
7. Which of the following is NOT an essential external condition for plant growth?
 - a) Water
 - b) Oxygen
 - c) Nutrients
 - d) Carbon Monoxide
8. The process where living, differentiated cells regain the capacity to divide is called:
 - a) Differentiation

- b) Redifferentiation
- c) Dedifferentiation
- d) Maturation

9. The final structure of a cell/tissue is determined by:

- a) Its genetic makeup only
- b) Its location within the plant
- c) The time of day
- d) The soil pH

10. The ability of plants to form different structures in response to environment is termed:

- a) Differentiation
- b) Plasticity
- c) Heterophylly
- d) Development

11. Which of the following is a plant growth promoter?

- a) Absciscic Acid
- b) Ethylene
- c) Auxin
- d) Dormin

12. The discovery of auxins is associated with experiments on:

- a) Rice seedlings with 'bakanae' disease
- b) Phototropism in canary grass coleoptiles
- c) Senescence in orange fruits
- d) Callus formation in tobacco

13. Which PGR is widely used to promote rooting in stem cuttings?

- a) Gibberellins
- b) Cytokinins
- c) Auxins
- d) Absciscic Acid

14. The phenomenon where the apical bud inhibits the growth of lateral buds is:

- a) Parthenocarpy
- b) Apical Dominance
- c) Bolting
- d) Abscission

15. 2,4-D is a synthetic auxin used as a:

- a) Rooting hormone
- b) Herbicide for dicot weeds
- c) Fruit ripening agent
- d) Growth retardant

16. Gibberellic acid was first isolated from a:

- a) Human urine
- b) Fungus
- c) Herring sperm DNA
- d) Coconut milk

17. Gibberellins do NOT help in:

- a) Increasing the length of grape stalks
- b) Bolting in rosette plants
- c) Delaying senescence
- d) Promoting stomatal closure

18. The first cytokinin discovered was:

- a) Zeatin
- b) Kinetin
- c) IAA
- d) ABA

19. Cytokinins are synthesized in areas of:

- a) Senescence
- b) Rapid cell division
- c) Water stress
- d) Leaf abscission

20. A simple gaseous PGR is:

- a) Auxin
- b) Gibberellin
- c) Cytokinin
- d) Ethylene

21. Ethylene promotes all EXCEPT:

- a) Senescence and abscission
- b) Apical dominance
- c) Fruit ripening
- d) Breaking of seed dormancy

22. The rise in respiration rate during fruit ripening is called:

- a) Respiratory climactic
- b) Aerobic respiration
- c) Fermentation
- d) Photorespiration

23. Absciscic Acid (ABA) is known as the:

- a) Growth hormone
- b) Stress hormone
- c) Ripening hormone
- d) Youth hormone

24. ABA acts as an antagonist to:

- a) Auxins
- b) Cytokinins
- c) Gibberellins
- d) Ethylene

25. Which PGR would you use to quickly ripen a fruit?

- a) Auxin
- b) Cytokinin
- c) Gibberellin
- d) Ethylene

26. The phase of growth characterized by cells with rich protoplasm and large nuclei is:

- a) Maturation
- b) Elongation
- c) Meristematic
- d) Senescence

27. In the geometrical growth equation

$$W_t = W_0 + e^{rt}$$

, 'r' represents:

- a) Time of growth
- b) Final size
- c) Relative growth rate
- d) Base of natural logarithms

28. Which technique is used to detect zones of elongation?

- a) Decapitation
- b) Parallel line technique
- c) Tissue culture
- d) Herbicide application

29. An example of redifferentiation is:

- a) Parenchyma cell forming cork cambium
- b) Meristematic cell forming xylem
- c) Cork cambium producing cork cells
- d) Zygote dividing

30. Heterophylly is observed in:

- a) Bean
- b) Maize
- c) Buttercup
- d) Rice

31. Which is an intracellular intrinsic factor controlling development?

- a) Light
- b) Temperature
- c) Genetic material
- d) Water

32. The PGR involved in regulating abscission and dormancy is:

- a) IAA
- b) GA
- c) ABA
- d) Kinetin

33. Ethephon is a source of:

- a) Auxin
- b) Cytokinin
- c) Ethylene
- d) Absciscic Acid

34. Which PGR promotes female flowers in cucumbers?

- a) Gibberellin
- b) Cytokinin
- c) Auxin
- d) Ethylene

35. The ability of a pollen tube to grow is measured by an increase in its:

- a) Fresh weight
- b) Dry weight
- c) Length
- d) Volume

36. The development of a tracheary element involves:

- a) Gain of protoplasm
- b) Loss of protoplasm
- c) Loss of cell wall
- d) Gain of chloroplasts

37. The initial slow phase of geometrical growth is called:

- a) Log phase
- b) Lag phase
- c) Stationary phase
- d) Death phase

38. What would happen if the meristem ceases to divide?

- a) The plant would show uncontrolled growth.
- b) The plant would die immediately.
- c) Growth in that region would stop.
- d) The plant would start secondary growth.

39. Which plant growth regulator is derived from carotenoids?

- a) IAA
- b) Kinetin
- c) ABA
- d) Ethylene

40. The PGR that helps overcome apical dominance is:

- a) Auxin
- b) Gibberellin
- c) Cytokinin
- d) Absciscic Acid

41. Seed germination requires:

- a) Darkness only
- b) Favourable conditions
- c) Presence of ABA
- d) Cold temperature only

42. Cells in the maturation phase are characterized by:

- a) Active cell division
- b) Maximum vacuolation
- c) Primary cell walls only
- d) High plasmodesmatal connections

43. Which of the following is a growth inhibitor?

- a) IAA
- b) GA3
- c) Kinetin
- d) ABA

44. The term 'auxin' was coined by:

- a) Charles Darwin
- b) F.W. Went
- c) E. Kurosawa
- d) F. Skoog

45. The 'bakanae' disease of rice is caused by a fungus that produces:

- a) Auxins
- b) Gibberellins
- c) Cytokinins
- d) Ethylene

46. Which PGR promotes nutrient mobilization and delays leaf senescence?

- a) Auxin
- b) Gibberellin
- c) Cytokinin
- d) Absciscic Acid

47. Ethylene is NOT involved in:

- a) Fruit ripening
- b) Apical hook formation in dicots
- c) Promoting seed dormancy
- d) Root hair formation

48. A plant growth regulator that is a gas at room temperature is:

- a) IAA
- b) ABA
- c) Ethylene
- d) GA3

49. The ability of a single maize root apical meristem to produce over 17,500 cells per hour is an example of growth as an increase in:

- a) Cell size
- b) Cell number
- c) Fresh weight
- d) Volume

50. The development of a plant from a zygote follows a:

- a) Random and unordered process
 - b) Precise and highly ordered succession of events
 - c) Process controlled only by external factors
 - d) Process that does not involve differentiation
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Answer Key for Set 1

1. b) Development
2. b) Meristems
3. b) Elongation
4. b) Only one daughter cell continues to divide
5. c) Living organisms in a natural environment
6. b) Relative Growth Rate
7. d) Carbon Monoxide
8. c) Dedifferentiation
9. b) Its location within the plant
10. b) Plasticity
11. c) Auxin
12. b) Phototropism in canary grass coleoptiles
13. c) Auxins
14. b) Apical Dominance
15. b) Herbicide for dicot weeds
16. b) Fungus
17. d) Promoting stomatal closure
18. b) Kinetin
19. b) Rapid cell division
20. d) Ethylene
21. b) Apical dominance
22. a) Respiratory climactic
23. b) Stress hormone
24. c) Gibberellins
25. d) Ethylene
26. c) Meristematic
27. c) Relative growth rate
28. b) Parallel line technique
29. c) Cork cambium producing cork cells
30. c) Buttercup
31. c) Genetic material
32. c) ABA
33. c) Ethylene
34. d) Ethylene
35. c) Length
36. b) Loss of protoplasm
37. b) Lag phase
38. c) Growth in that region would stop.
39. c) ABA
40. c) Cytokinin
41. b) Favourable conditions
42. b) Maximum vacuolation
43. d) ABA
44. b) F.W. Went
45. b) Gibberellins
46. c) Cytokinin
47. c) Promoting seed dormancy
48. c) Ethylene
49. b) Cell number
50. b) Precise and highly ordered succession of events

