



BIOLOGY

NCERT - FULL MARKS BIOLOGY(TAMIL)

PLANT GROWTH AND DEVELOPMENT

Questions

1. Define growth, differentiation, development, dedifferentiation, redifferentiation, determinate growth, meristem and growth rate.





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2. Why is not any one parameter good enough to demonstrate growth throughout the life of a flowering plant?



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3. Describe briefly:

(a) Arithmetic growth

(b) Geometric growth

(c) Sigmoid growth curve

(d) Absolute and relative growth rates



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4. List five main groups of natural plant growth regulators. Write a note on discovery, physiological functions and agricultural/horticultural applications of any one of them.



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5. What do you understand by photoperiodism and vernalisation? Describe their significance.



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6. Why is Abscisic acid also known as stress hormone?



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7. 'Both growth and differentiation in higher plants are open'. Comment.



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8. 'Both a short day plant and a long day plant can flower simultaneously in a given place'. Explain.



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9. Which one of the plant growth regulators would you use if you are asked to:

- (a) Induce rooting in a twig
- (b) Quickly ripen a fruit

(c) Delay leaf senescence

(d) Induce growth in axillary buds

(e) 'Bolt' a rosette plant

(f) Induce immediate stomatal closure in leaves.



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10. Will a defoliated plant respond to photoperiodic cycle? Give reasons.



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11. What would be expected to happen if:

(a) GA_3 is applied to rice seedlings

(b) Dividing cells stop differentiating

(c) A rotten fruit gets mixed with unripe fruits

(d) You forget to add cytokinin to the culture medium.



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Evaluation

1. Select the wrong statement from the following:

- A. Formative phase of the cells retain the capability of cell division.
- B. In elongation phase development of central vacuole takes place.
- C. In maturation phase thickening and differentiation takes place.
- D. In maturation phase, the cells grow further.

Answer:



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2. If the diameter of the pulley is 6 inches, length of pointer is 10 inches and distance travelled by pointer is 5 inches. Calculate the actual growth in length of plant.

A. 3 inches

B. 6 inches

C. 12 inches

D. 30 inches

Answer:



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3. In unisexual plants, sex can be changed by the application of

A. Ethanol

B. Cytokinins

C. ABA

D. Auxin

Answer:



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4. Select the correctly matched one

- | | |
|------------------------|------------------------|
| A) Human urine | i) Auxin -B |
| B) Corn gram oil | ii) GA ₃ |
| C) Fungus | iii) Absciscic acid II |
| D) Herring fish sperm | iv) Kinitin |
| E) Unripe maize grains | v) Auxin A |
| F) Young cotton bolls | vi) Zeatin |

A.

$A - iii, B - iv, C - v, D - vi, E - i, F - ii$

B.

$A - v, B - i, C - ii, D - iv, E - vi, F - iii$

C.

$A - iii, B - v, C - vi, D - i, E - ii, F - iv$

D.

$A - ii, B - iii, C - v, D - vi, E - iv, F - i$

Answer:



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5. Seed dormancy allows the plants to

A. overcome unfavourable climatic conditions

B. develop healthy seeds

C. reduce viability

D. prevent deterioration of seeds

Answer:



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6. What are the parameters used to measure growth of plants?



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7. What is plasticity?



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8. Write the physiological effect of Cytokinins.



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9. Describe the mechanism of photoperiodic induction of flowering.



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10. Give a brief account on Programmed Cell Death (PCD).



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