



BIOLOGY

BOOKS - PREMIERS PUBLISHERS

PLANT GROWTH AND DEVELOPMENT

Evaluation Textbook Question Answers

1. Select the wrong statement from the following:

A. A . Formative phase of the cells retain the capability of cell division.

B. B . In elongation phase development of central vacuole takes place.

C. C . In maturation phase thickening and differentiation takes place.

D. D . In maturation phase, the cells grow further.

Answer: D



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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: A



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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: C



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-(ii), B-(iv), C-(v), D-(vi), E-(i), F-(ii)

B. A-(v), B-(i), C-(iii), 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: B



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5. Seed dormancy allows the plants to

A. overcome unfavourable climatic conditions

B. develop health seeds

C. reduce viability

D. prevent deterioration of seeds

Answer: A



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



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7. What is plasticity?



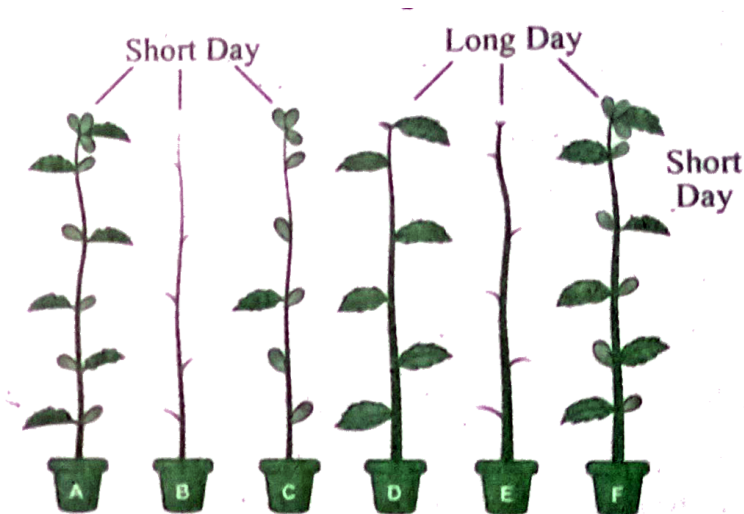
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8. Write the physiological effect of Cytokinins.



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9. Describe the mechanism of photoperiodic induction of following.





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



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Other Important Questions Answers Mcqs

1. Open form of the growth occurs in :

A. leaves and flowers

B. stem and root

C. leaves and stem

D. stem and flowers

Answer: B



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2. Bamboo is classified under

A. monocarpic annual plants

B. polycarpic perennials

C. monocarpic perennials

D. polycarpic annual plants

Answer: C



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3. Primary growth of the plant is due to the activity of:

A. phloem parenchyma

B. phloem meristem

C. vascular cambium

D. apical meristem

Answer: D



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4. One single maize root apical meristem can give rise to _____ new cells per hour.

A. 17,500 new cells per hour

B. 18,500 new cells per hour

C. 19,000 new cells per hour

D. 500 new cells per hour

Answer: A



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5. Thickening and differentiation of cells take place during

A. elongation phase

B. formative phase

C. maturation phase

D. flowering phase

Answer: C



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6. When the total growth of a plant is plotted against time, the shape of the curve obtained is:

A. hyperbolic curve

B. S' shaped sigmoid curve

C. linear curve

D. none of the above

Answer: B



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7. The total growth of the plant consists of four phases in the following order.

A. Log phase, lag phase, decelerating phase
and maturation phase

B. Log phase, lag phase, maturation phase
and decelerating phase

C. Lag phase, log phase maturation phase
and decelerating phase

D. Lag phase, log phase, decelerating phase
and maturation phase

Answer: D



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8. Internal factors, that influence the growth of the plant is:

A. nutrition

B. light

C. C/N ratio

D. oxygen

Answer: C



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9. Absence of light may lead to yellowish in colour in plants and this is called:

A. venation

B. etiolation

C. estivation

D. vernation

Answer: B



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10. Differentiated cells, after multiplication again lose the ability to divide and mature to perform specific functions. This is called:

- A. plasticity
- B. differentiation
- C. dedifferentiation
- D. redifferentiation

Answer: D



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11. Indicated a plant growth regulator from the following:

A. cytocin

B. cytokinins

C. acetic acid

D. methylene

Answer: B



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12. Some of the polamines are known to behave like

A. growth inhibitors

B. plant hormones

C. flowering inhibitors

D. fruit ripening agent

Answer: B



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13. The activity of synergistic effect involves the activity of:

A. auxin and gibberellins

B. auxin and ethylene

C. ABA and gibberellins

D. none of the above

Answer: A



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14. Phytohormones are usually produced to in tips of:

A. root alone

B. stem alone

C. leaves alone

D. root, stem and leaves

Answer: D



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15. The term Auxin was coined by

A. Charles Darwin

B. Kogl

C. F.W. Went

D. Smith

Answer: C



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16. Indole Acetic Acid (IAA) is a:

A. A . growth inhibitor

B. B . hetero auxin

C. C . root inhibitor

D. D . synthetic auxin

Answer: B



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17. Indicate a synthetic auxin.

A. Indole Acetic Acid

B. phenyl Acetic Acid

C. Indole Butyric Acid

D. Napthalene Acetic Acid

Answer: D



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18. Auxin has a similar chemical structure of:

A. Indole acetic acid

B. Nepthalene acetic acid

C. Phenyl acetic acid

D. 2,4-Dichloro phenoxy

Answer: A



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19. Auxin stimulates:

A. transpiration

B. respiration

C. flowering

D. none of the above

Answer: B



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20. The term Gibberellin was coined by

A. Brain

B. Yabuta

C. Sumiki

D. Kurosawa

Answer: B



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21. Who established the structure of gibberellic acid ?

A. Brain et al

B. Kurosawa

C. Cross et al

D. Yabuta and Sumiki

Answer: C



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22. Formation of seedless fruits without fertilization is induced by:

A. auxin and gibberellins

B. cytokinin

C. ethylene

D. gibberellin

Answer: D



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23. Cytokinins inducing cell division was first demonstrated by:

- A. Heberlandt
- B. Charles Darwin
- C. Clarke
- D. Hubert

Answer: A



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24. Zeatin is first isolate from unripe grains of:

A. paddy

B. wheat

C. maize

D. corn

Answer: C



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25. Indicate correct statements.

(i) Genes are intracellular factors for growth.

(ii) Temperature has no role in the growth of plant.

(iii) Oxygen has a vital role in the growth of plants.

(iv) C/N ratio of solid does not affect the growth of plant.

A. (i) and (iv)

B. (i) and (iv)

C. (i) and (iii)

D. (ii) and (iii)

Answer: C



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26. Aspartic acid is classified under

A. free auxin

B. precursor of auxin

C. chemical structure of auxin

D. bound auxin

Answer: D



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27. The stress phytohormones (Abscisic acid)

was first isolated by:

A. Linn et al

B. Addicott et al

C. Edward et al

D. Stone and Black

Answer: B



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28. The chemical structure of abscisic acid resembles the structure of :

A. Indole Acetic Acid

B. malanic acid

C. carotenoid

D. xanthophyll

Answer: C



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29. Pick out the correct statement from the following:

(i) Abscisic acid is found abundantly inside the chloroplast of green cells.

(ii) ABA is a powerful growth promotor.

(iii) ABA is formed from pentose phosphate pathway.

(iv) ABA has anti-auxin and anti-gibberellin property.

A. (i) and (iv)

B. (i) and (ii)

C. (ii) and (iii)

D. (ii) and (iv)

Answer: A



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30. Abscisic acid induces male flower formation on female plants of:

A. potato

B. *Cannabis sativa*

C. *Vinca rosea*

D. *Delomix regia*

Answer: B



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31. Pea and barley are classified under:

- A. short day plants
- B. short long day plants
- C. long day plants
- D. long short day plants

Answer: C



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32. The term 'photoperiodism' was coined by :

- A. Miller and Arnald
- B. Garner and Allard
- C. Michael and Edward
- D. Darein and Lamark

Answer: B



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33. Usually *Xanthium pensylvanicum* will flower under:

- A. long day condition
- B. short long day condition
- C. photoneutral condition
- D. short day condition

Answer: D



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34. Phytochrome is

A. reddish xanthophyll pigment

B. bluish biliprotein pigment

C. rodopsin pigment

D. none of j

Answer: B



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35. Who coined the term phytochrome?

A. Buter et al

B. Michell et al

C. Boumick et al

D. Garners and Allard

Answer: A



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36. The term vernalisation was first used by

.....

A. Garner

B. Michell et al

C. Lysenko

D. Kawasacki

Answer: C



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37. Pick out the wrong statement from the following :

- A. Vernalization increases the cold resistance of plants
- B. It increase the resistance of plants to fungal disease
- C. Vernalization increase the vegetative period of the plant
- D. It accelerates the plant breeding

Answer: C



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38. In Oxadis, the seed viability ranges from :

- A. 10 to 15 years
- B. a few days
- C. more than 100 years
- D. upto 100 years

Answer: B



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39. In apple and plum, the method of breaking seed dormancy involves the process of

A. impaction

B. Scarification

C. exposing to red light

D. Stratification

Answer: D



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40. Proteolytic enzymes involved in PCD in plants are

A. phytochrome

B. capsases

C. phytaspases

D. protolysis

Answer: C



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Other Important Questions Answers Answer The Following 2 Marks

1. Define closed form of growth in plants.



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2. What is meant by grand period of growth in plants?



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3. Name the phases of growth in S-shaped growth curve.



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4. Define arithmetic growth rate in plant organ.



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5. Differentiate the absolute growth rate from relative growth rate.



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6. Define the term etiolation.



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7. What is meant by redifferentiation of plant cells ?



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8. Name any two synthetic auxins.



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9. Explain the synergistic effect of phytochromes.



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10. Name the natural auxins present in plants.



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11. Mention any two physiological effect of auxins in plant.



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12. Match the following.

(i) Indole acetic acid	(a) bolting
(ii) Napthalene acetic acid	(b) anti-auxin
(iii) Gibberellins	(c) synthetic auxin
(iv) Abscisic acid	(d) Natural auxin



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13. Where do you find cytokinin hormone in plants ?



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14. What is Richmond Lang effect?



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15. What are non-climatcteric fruits?



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



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17. Define short day plants?



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18. What is the importance of photoperiodism ?



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19. Write a note on vernalization.



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20. What is meant by epigeal germination?



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21. Define seed dormancy.



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22. Define phytoherontology.



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



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24. Define Abscission.



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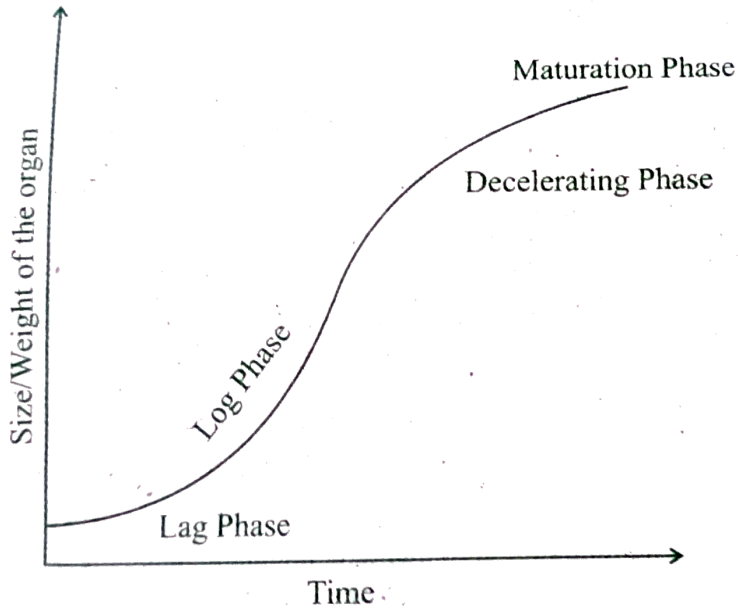
Other Important Questions Answers Answer The Following 3 Marks

1. Mention the phases of growth in plants.



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2. Draw the 'S' shaped growth curve and mark the different phases of growth.



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3. List out the internal factors that affect growth.



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4. Mention any their characteristic features of phytohormones.



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5. List out the agricultural applications of auxins.



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6. Write the physiological effects of gibberellins.



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7. What are the uses of ethylene in agriculture ?



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8. What are climacteric fruits?



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9. Give the classification of plants based on photoperiodism.



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10. Explain the term photoperiodic induction.



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11. List the parctical applications of vernalization.



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12. What are the internal factors affecting seed germination?



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13. Explain any three factors causing dormancy of seeds.



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14. What is the significance of abscission?



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Other Important Questions Answers Answer The Following 5 Marks

1. Describe the geometric growth rate in plants with suitable diagram.



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2. Describe the experiment to measure the increase in length of the stem tip using an arc

auxanometer.



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3. Write an essay on the phytochrome, Gibberellins in plants.



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4. What are their physiological effects of Abscisic acid in plants and its role in agriculture ?



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5. Write an essay on the role of ethylene on plant physiology and agriculture.



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6. Explain the theories to explain the mechanism of vernalization.



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7. List the types of senescence.



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8. Name the any one method of breaking dormancy of seeds and explain.



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