

BIOLOGY

BOOKS - FULL MARKS BIOLOGY (TAMIL ENGLISH)

PLANT GROWTH AND DEVELOPMENT

Textbook Evaluation Questions Solved

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: 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. 1.5 inches

B. 6 inches

C. 12 inches

D. 30 inches

Answer: A



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3. Is the powerful growth inhibitor .

A. ethanol

B. cytokinins

C. ABA

D. Auxin

Answer: C



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4. Select the correctly matched one:

S. No.	Particulars	S.No.	Particulars
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- ii, D- iv, E- vi, F- ii

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

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

Answer: B



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: D



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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Additional Questions Solved Choose The Correct Answer

1. Identify the monocarpic perennial plant from the following list.

A. Paddy

B. Bean

C. Bamboo

D. Coconut

Answer: C





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2. Growth rate is maximum in phase.

A. Lag

B. Log

C. Decelerating

D. Maturation

Answer: B



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3. Proper plant growth occurs at a temperature between

A. 25°C to 28°C

B. 28°C to 45°C

C. 25°C to 35°C

D. 28°C to 30°C

Answer: D



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4. The process by which differentiated cell regain the ability of cell division

A. Differentiation

B. Dedifferentiation

C. Redifferentiation

D. Totipotency

Answer: B



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5. The term Auxin was first used by

A. Kogl.Smith

B. Darwin

C. F.W. Went.

D. Kurosawa

Answer: C



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6. Auxin was first isolated from

A. Corn grain oil

B. Human blood

C. Human urine

D. Rice bran oil

Answer: C



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7. Which is NOT a natural auxin?

A. IAA

B. PAA

C. IPA

D. NAA

Answer: D



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8. The amino which is a precursor of IAA is

A. Methionine

B. Valine

C. Isoleuine

D. Tryptophan

Answer: D



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9. Identify the wrong statement regarding the physiological effects of Auxin.

- (i) Auxin prevents abscission (ii) Auxin inhibits respiration (iii) Auxin promotes cell elongation (iv) Auxin breaks seed dormancy

A. (i) only

B. (ii) only

C. (iii) only

D. (i), (ii) and (iv)

Answer: B



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10. How many number of giberellins were discovered so far?

A. 50

B. 70

C. 100

D. 80

Answer: C





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11. Foolish seedling disease affects

A. Maize

B. Rice

C. Sorghum

D. Wheat

Answer: B



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12. Bakanae's disease was first noticed by

A. F.W. Went

B. Kurosawa

C. Cocken

D. Denny

Answer: B



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13. Apical dominance is due to the effect of

.....

A. Auxin

B. Gibberellin

C. Ethylene

D. Cytokinin

Answer: A



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14. Match the following:

(a)	Ethylene	(i)	Bolting
(b)	Cytokinin	(ii)	Apical dominance
(c)	Auxin	(iii)	Epinasty
(d)	Gibberellin	(iv)	Richmond Lang Effect

A. a - iii, b - iv, c - ii, d-i

B. a -i, b - iii, c - iv, d - ii

C. a - iii, b - ii, c - iv, d-i

D. a - ii, b - iii, c - iv, d-i

Answer: A



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15. The most widely occurring cytokinin in plants is _____

- A. Iso propyl adenine
- B. Iso pentenyl adenine
- C. Indole propionic acid
- D. Iso propionic adenine

Answer: B



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16. Which of the following does not act as a precursor of ethylene?

A. Fumaric acid

B. Malic acid

C. Linolenic acid

D. Methionine

Answer: B



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17. Identify the non-climacteric fruit.

A. Tomato

B. Grapes

C. Apples

D. Mango

Answer: B



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18. Which one is stress hormone

A. Ethylene

B. Cytokinin

C. Auxin

D. Abscissic acid

Answer: D



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19. Which of the following plant hormone functions against auxin?

A. Gibberellin

B. Cytokinin

C. Ethylene

D. Abscissic acid

Answer: D



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20. Closure of stomato can be induced by

.....

A. Abscissic acid

B. Ethylene

C. NAA

D. Cytokinin

Answer: A



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21. Maryland mammoth requires hours of light.

A. 8

B. 10

C. 12

D. 15.05

Answer: C



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22. Identify the day neutral plants.

A. Pea

B. Wheat

C. Tomato

D. Soyabean

Answer: C



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23. The P_r form absorbs red light in

A. 730

B. 620

C. 660

D. 635

Answer: C



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24. The term vernalisation was first used by

.....

A. Chailakyan

B. Garner & Allard

C. Lysenko

D. F.W. Went

Answer: C



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25. Seed viability lasting for 1000 years has been recorded in _____

A. Orange

B. Oxalis

C. Lotus

D. Coconut

Answer: C



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26. Shaking the seeds vigorously to remove the plug in the micropyle is the method of

A. stratification

B. Impaction

C. Scarification

D. Emaciation

Answer: B



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27. After abicission, outer layer of cells becomes by periderm.

A. Lignified

B. Pectinised

C. Suberized

D. Stratified

Answer: C



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**Additional Questions Solved Very Short Answer
Type Questions 2 Marks**

1. Give the definition for growth



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2. Explain the term 'Monocarpic perennial'.



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3. Define grand period of growth and mention its phases.



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4. Plot a graph depicting the constant linear growth.



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5. Describe briefly:

(a) Arithmetic growth

(b) Geometric growth

(c) Sigmoid growth curve

(d) Absolute and relative growth rates



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6. Define differentiation.



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7. What is Re-differentiation?



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8. What are Plant Growth Regulators (PGR's)?



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9. Mention any four Phytohormone.



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10. What does bioassay mean?



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11. Explain Anti-auxins.



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12. Apical dominance – Explain.



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13. Mention the precursors of (a) Auxin, (b) Gibberellin, (c) Cytokinin and (d) Absciscic acid.



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14. How Gibberellins are transported from its site of production?



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15. What do you mean by the term – Basipetal transport and Acropetal transport?



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16. Define Bolting.



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17. Which plants are affected by Bakanae's disease? Name the causative organism.



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18. Biennials usually flower at the second year of growth. Is it possible to make them flower in the first year itself? How?



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19. Where the cytokinin is synthesized in plants?



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20. Give an account on neem cotyledon assay.



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21. What is Richmond Lang effect?





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22. Write a note on Bioassay of Ethylene.



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23. What are climacteric fruits?



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24. ABA is called as stress hormone – Justify.





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25. Define photoperiodism. Name the person who coined this term



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26. Define the term photo neutrals.



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27. What is the importance of photoperiodism ?



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28. Vernalisation – Define.



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29. How vernalisation is carried out?



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30. Define Seed germination and state its types.



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31. What are photoblastic seeds?



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32. How can we overcome dormancy in photoblastic seeds?



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33. Senescence -Define.



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34. What field does phyto gerontology deals with?



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35. List the types of senescence.



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36. Where the abscission zone is formed?



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37. Expand PCD and define it.



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Additional Questions Solved Short Answer Type Questions 3 Marks

1. Draw a graph of sigmoid curve.



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2. Correlate the terms light & etiolation in plant.



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3. List out the internal factors that affect growth.



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4. Give an account on Dedifferentiation.



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5. Explain synergistic & Antagonistic effect of plant hormones.



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6. Name any two synthetic auxins.



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7. Describe the procedure of Avena curvature test.



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8. How auxin is useful in tissue culture technique?



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9. Mention the role of ethylene in agriculture field.



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10. Give answer for the following with regard to abscisic acid.

(a) Chemical structure (b) Precursor (c)

Bioassay



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11. How ABA involves in stomatal closure.



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12. List the practical applications of vernalization.



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13. Write a note on Epigeal & hypogeal germination.



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14. Discuss about seed viability.



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15. Comment on seed dormancy and its reason.



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16. Senescence -Define.



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17. Mention the role of hormones in Abscission.



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18. Why Abscission has to take place?



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**Additional Questions Solved Long Answer Type
Questions 5 Marks**

1. Enumerate the characteristics of growth.



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2. Explain the three phases of growth.



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3. Explain geometric growth rate?



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4. Mention any their characterstic features of phytohormones.



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5. Write the physiological effect of Auxin.



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6. Mention the role of Auxin in Agri-field.



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7. Mention the role of Gibberellin in agriculture.



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8. Explain the physiological effects of ethylene.



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9. Explain the physiological effects of ABA.



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10. What is photoperiodism. How are plants classified based on photoperiodism?



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11. Describe the concept of Phytochrome.



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



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13. Discuss the external factors that affect seed germination.



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



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15. List the types of senescence.



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16. Write a note on physiology of senescence.



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17. Mention some physiological changes occurring during senescence.



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Higher Order Thinking Skills Hots

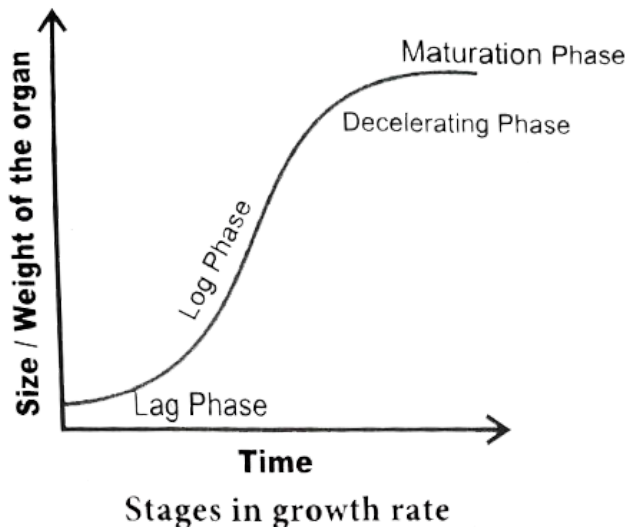
1. A farmer grows cucumber plants in his field. He wants to increase the number of female

flowers in them. Which plant growth hormone can be applied to achieve this/



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2. In the figure of sigmoid and curve given below, label the segments A, B and C.





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3. In most plants, the terminal bud suppresses the development of lateral buds. What is this phenomenon called. Name the phytohormone that promote this phenomenon.



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4. The physiological effects of ethylene is both positive and negative. Comment.



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5. Light plays an important role in the life of all organisms. Name any two physiological processes in plants that are affected by light.



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6. Classify the following plants into long day plants, short day plants and day neutral plants, Wheat, sunflower, maize, tobacco, oats, chrysanthemum,



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