BIOLOGY

BOOKS - PRADEEP BIOLOGY (HINGLISH)

PLANT GROWTH AND DEVELOPMENT

Ncert Exercises

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

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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 produce 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. Would a defoliated plant respond to photoperiodic cycle? Why?

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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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Additional Questions Very Short Answer Questions

1. Name the plant hormone that inhibits the growth of plants

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2. Define the term photoperiodism

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3. Name the two synthetic auxins used for inducing the rooting in woody plants

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4. What is the full form of IAA ?

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5. What is the full form of NAA ?

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6. What is the full form of IBA ?

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7. What does an overipe apple release which affects other apples in the basket ?

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8. Name the stress hormone in plants that functions during drought

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9. Why is the term 'long day plant' a misnomer ?

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10. What is growth curve ?

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11. A student cultures a callus from the Tobacco pith in a sterillised minimal nutritive medium but adds more cytokinins than auxins. What would develop first from the callus -the shoot buds or the roots ?

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12. Expand -ABA, NADP

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13. Define growth regulators

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14. What induces parthenocarpy in grapes ?

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15. Certain plants will flower only when they are exposed to low tempeature for a few weeks. What do you call for this requirement ?

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16. What is 'short-night plant'?Given an example

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17. What part of plant perceives light for flowering ?

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18. Which hormone helps the plants to cope with the adverse environmental conditions ?

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19. Placing a ripe apple in a bag of green bananas will cause them to ripen quickly. This occurs because the apple

(a) absorbs cytokinin (b) forms digestive enzymes (c) lacks auxin (d) produces ethylene

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20. Gibberellins promote the production of

(a) male flowers (b) female flower (c) neutral flowers (d) abscission layer

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21. In some germinating seeds, enzymes mobillise nutrients in the cotyledons. Name the phytohormone that stimulates the production of such enzymes

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22. Define vernalization

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23. A farmer grows cucumber plants in his field. He wants to increase the number of female flowers in them. Which plant growth regulator can be applied to achieve this ?

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24. Define parthenocarpy . Name the plant hormone used to induce parthenocarpy.

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25. A gardener finds some broad leaved dicotweeds growing in his lawns what can be done to get rid of the weeds efficiently?

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Additional Questions Short Answer Questions

1. What do you understand by apical dominance ?

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2. List any four uses of auxins.

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3. Would you expect soyabean plants to flower if given a daily light exposure of 15 hours ? Give reasons.

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4. Which among the following is a long day plant ? Why is it so called ?

Sugar beet, Sugar cane, Tomato

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5. Write the full forms of two synthetic auxins NAA and IBA. What for are they used ?

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6. Explain apical dominance. Name the hormone that controls it.

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7. What is bolting ? What conditions can induce bolting naturally and how can it be induced artificially ?

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8. Where are auxin synthesized in plants ? Mention any two of their functions.

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9. Fill in the places with appropriate word/ words.

(a)A phase of growth which is maximum and fastest is .....

(b)Apical domince as expressed in dictyledonous plants is due to the presence of more..... In the apical buyd than in the

lateral ones

(c)In additon to lauxin a..... Must be supplied to culture medium to obtain a good callus in plant tissue culture

(d).....of a vegetative plants are the sites of photperiodic perception.

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10. Ligh plays an improtant role in the life of all organisms .Name any three Physiological porcesses in plants which are affected by light.

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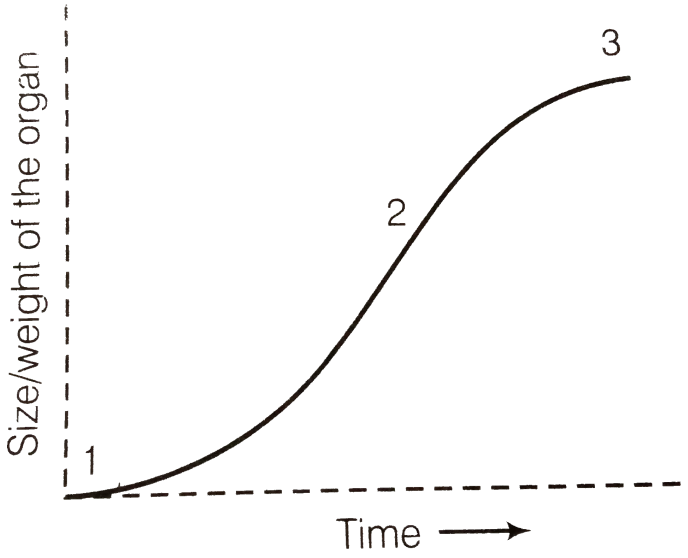
11. In the figure of sigmoid growth cureve given below label segments 1,2 and3.



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12. What are plant growth hormones ? How do they differ from growth regulators ?

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13. Fill in the blanks :

(A) ....is a simple gaseous hormone.

(B) ....is shedding of leaves, fruits or flowers by a plant

(C) Plant growth is generally confined to ....regions and in.....tissues.

(D) Cytokinins are synthesized in areas where .... is occurings.

(E) Auxins are generally produced by the growing apices of ....and .....

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Short Answer Questions

1. What is the difference between 'florigen' and other growth hormones ?

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2. Taking the examples of auxins and cytockinins together explain:

(i) a synergetic action in plants

(ii) an antagonistic action in plants

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3. Explain inhibitory effect of auxins with the help of one example

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4. Explain in 2-3 lines each of the following terms with the help of examples taken from different plant tissues

? (a) Differentation,(b) De differenatiation ,(c) Re-differentiation

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5. Plant growth substancees (PGS) have innumerable practical applications. Name the PGS you should use to

(a) Increase yield of sugarcame

(b) Promote lateral shoot growth

(c) Cause sprouting of potato tuber

(d) inhibit seed germination

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6. Nicotiana tabacum, a short plant, when exposed to more than the critical period of light fails to flower. Explain.

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7. (A) Define plant growth

(B) What is meaning of 'bakanae' ?

(C) Name the microorganism which yields gibberellins.

(D) Name the cytokinin-like substance isolated from corn kernels and coconut milk

(E) How gibberellins are different from auxins in their chemical structure ?

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8. Make corrections wherever you find mistake in spellings/words in the following parapraphs/sentences.

(A) During the period of senescence, a gradual addition occurs in the structure and functioning of an organ or organism which is characterised by the accumulation of active metabolic materials and increase in dry weight.

(B) When the movement of curvature is produced by diffused stimuli and affects the whole plant uniformly, it is of tropic type. If the curvature is produced by directional mutimuli and does not affect the whole plant, it is of nastic type.

(C) Shoot elongation in some dwarf varieties and barley endosperm test are used as bioassays for auxins and Avena curvature test is used as bioassay for ethylene.

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9. Fill in the blanks:

(A) Ethylene is synthesized in tissue undergoing ....and..... fruits.

(B) Abscisic acid acts as a general....of growth and metabolism.

(C) .....is a period between complete materity and final death of an organ or organism.

(D) ....were first plant hormones to be discovered.

(E) ....means the testing of chemical substance for its activity in causing a growth response in a living plant or its part.

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Long Answer Question

1. Write an essay on growth regulators in plants

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2. Describe the phenomenon of photoperiodism

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3. What is growth ? Explain why is plant growth considered indeterminate

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4. Describe the conditions necessary for growth

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5. Name a hormone which

A.is gaseous in nature

B. is responsible for phototropism

C. induces femaleness in flowers of cucumber

D. is used for killing weeds (dicots)

E. induces flowsering in long day plants

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6. It is known that some varieties of wheat are sown in autumn but are harvested around next mid summer ltbvrgt A.what could be the probable reason for this ?

B. what term is used for this promotion of lowering under low temperature?

C. which palnt hormone can replace the cold treatment?

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Analytical Questions With Answers

1. Why does exogenous application of auxin fail to enhance the growth of intact plants ?

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2. Why are vitamins not considered as plant growht hormones ?

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3. Why is it appropriate to call short-day plant a long-night plant ?

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4. Why do some plants belonging to halophytes and growing in marshy lands, face great difficulty in seed germination. ? How such plants solve this problem ?

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5. Why do gibberellins not enhance the growth of isolated plant parts ?

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6. What is meant by bioassay ? Name any two bioassays for auxins.

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7. Name two synthetic auxins. How are they applied in agriculture ?

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8. Explain how it is possible that a short day plant and a long day plant growing in the same location could flower on the same day of the year.

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9. How will you induce lateral branching in a plant which normally does not produce them ? Give reason in support of your answer.

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10. (a) What term is used for seedless fruits? How does auxin induce parthenocarpy ?

(b) Name any two other plants where this technique can be applied commercially.

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11. Plant cutting are dipped in a solution and then planted in nursery beds to fasten the rooting, What there in the solution

and what function it plays in the initiation of roots ?

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12. What causes apples to ripen much more slowly in a refrigerator than they do if left on a table at room temperature ?

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13. How will you prevent premature fall of leaves and flowers ?

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14. How will you prevent the premature ripening of fruits ?

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15. Give three examples of dedifferentiation in plants.

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16. How would you prevent leaf fall the fruity drop in plants ? Give reason.

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17. In botanical gardens and tea gardens, gardeners trim the plants regularly so that they remain bushy. Does this practice have any scientific explanation.

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Practice Questions Multiple Choice Questions

1. The hormone involved in mobilizatio of food material in cereal grain during germinations is

A. Auxin

B. Gibberellin

C. Cytokinin

D. ABA

Answer: B

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2. Vernalization is done at

A. Low temperature

B. Low light intensity

C. High temperature

D. High light intensity

Answer: A

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3. To remove seed dormancy by mechanical removing of seed-coat is called

A. Stratifcation

B. Vernalization

C. Scarification

D. Photosperiodism

Answer: C

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4. Differention of shoot is controlled by

A. High auxin : cytokinin ratio

B. High cytokinin : auxin ratio

C. High gibberellin : auxin ratio

D. High gibberellin : cytokinin ratio

Answer: B

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5. Coconut milk factor is

A. an auxin

B. a gibberllin

C. abscisic acid

D. cytokinin

Answer: D

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6. Senescence is inhibited by

A. Ethylene

B. Gibberellic acid

C. abscisic acid

D. cytokinin

Answer: D

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7. To test any chemical substance by using living system is called

A. Grafting

B. Cloning

C. Biopsy

D. Bioassay

Answer: D

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8. Auxins promote

A. Cell growth and enlargement

B. Cambial activity

C. Apical dominance

D. All of these

Answer: D

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9. Pruning of plants promotes branching because the axillary buds get sensitized to

A. Ethylene

B. Gibberellin

C. Cytokinin

D. Indole acetic acid

Answer: D

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10. Cell elongation in internodal regions of the green plants takes place due to

A. Cytokinins

B. Gibberellins

C. Ethylene

D. Indole acetic acid

Answer: B

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11. One set of a plant was grown at 12 hours day and 12 hours night period cycle and it flowered while in the other set night period cycles and it flowered while in the other set night phase was interrupted by flash of ligth and did not produce

flower. Under which one of the following categories will you place this plant

A. Darkness neutral

B. Day neutral

C. Short day

D. Long day

Answer: C

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12. Which hormone is maximum in coconut milk ?

A. Gibberellins

B. Ethylene

C. Cytokinin

D. Auxin

Answer: C

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13. Leaf fall occurs in a tree when there is an increase in the concentration of

A. Abscissic acid

B. Auxin

C. Gibberellins

D. cytokinin

Answer: A

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14. How does pruning help in making the hedge dense ?

A. It increases would hormones

B. It induces the differentiation of new shoot from the root stock

C. It frees axillary buds from apical dominance

D. The apical shoot grows faster after pruning

Answer: C

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15. Parthenocarpic tomato fruits can be produced by

A. Treating the plant with phenyl mercuric acetate

B. Removing androecium of flowers before pollen grains are released

C. Treating the plants with low concentrations of gibberellic acid and auxins

D. Raising the plants from vernalized seeds

Answer: C

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16. Natural growth hormone

A. NAA

B. Ethylene

C. 2, 4, 5-T

D. 2, 4-D

Answer: B

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17. Foolish seedling disease of rice led to the discovery of

A. Abscisic acid

B. Cytokinin

C. 2, 4-D

D. Gibberellin

Answer: D

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18. Auxin is synthesized in which part of the plant ?

A. Apical

B. Nodal

C. Internodal

D. Axillary

Answer: A

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19. One hormone helps in ripening of fruits while the other stimulates closure of stomata. These are respectively

A. Abscisic acid and auxin

B. Ethylene and abscisic acid

C. Abscisic acid and ethylene

D. Ethylene and gibberellic acid

Answer: B

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20. Pick out the correct statements

(A) Cytokinis specially help in delaying senescence

(B) Auxine are involved in regulating apical dominance

(C) Ethylene is especially useful in enchancing seed germination.

(D) Gibberellins are respeonsible for immature falling of leaves

A. (A) and (C) only

B. (A) and (D) only

C. (B) and (C) only

D. (A) and (B) only

Answer: D

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21. Match the columns and find the correct combination :

	I		II
a	Auxin	1.	Herring sperm DNA
b	Cytokinin	2	Inhibitor of growth
c	Gibberellin	3.	Apical dominance
d	Ethylene	4.	Epinasty
e	abscisic acid	5.	Induces amylase synthesis

A. $a-3, b-1, c-5, d-4, e-5$

B. $a-4, b-5, c-1, d-3, e-2$

C. $a-2, b-1, c-5, d-3, e-4$

D. $a-3, b-1, c-5, d-2, e-4$

Answer: A

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22. Senescence as an active devlopmental cellular process in the growth and functioning of a flowering plant, is indicated in

A. Annual plants

B. Floral parts

C. Vessel and Tracheid differentiation

D. Leaf abscission

Answer: D

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23. Importance of day length in flowering of plants was first shown in

A. Cotton

B. Petunia

C. Lemna

D. Tobacco

Answer: D

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24. Ethylene is used for

A. Retarding ripening of tomatoes

B. Hastening of ripening of fruits

C. Slowing down ripening of apples

D. Both (b) and (c)

Answer: B

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25. Coconut milk contains

A. ABA

B. Auxin

C. Cytokinin

D. Gibberellin

Answer: C

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26. The affect of apical dominance can be overcome by which of the following hormone

A. IAA

B. Ethylene

C. Gibberellins

D. cytokinin

Answer: D

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27. Match the following

$A.$	IAA	$i.$	Herring sperm DNA
$B.$	ABA	$ii.$	Bolting
$C.$	Ethylene	$iii.$	Stomatal closure
$D.$	GA	$iv.$	Weed-free lawns
$E.$	Cytokinins	$v.$	Ripening of fruits

A.

$(A)-(iv),(B)-(iii),(C)-(v),(D)-(ii),(E)-(i)$

B.

$(A)-(v),(B)-(iii),(C)-(iv),(D)-(ii),(E)-(i)$

C.

$(A)-(iv),(B)-(i),(C)-(iv),(D)-(iii),(E)-(ii)$

D.

$(A)-(v),(B)-(iii),(C)-(ii),(D)-(i),(E)-(iv)$

Answer: A

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28. Apples are generally wrapped in waxed paper to

A. Prevent sunlight for changing its colour

B. Prevent aerobic respiration by checking the entry of O_2

C. Prevent ethylene formation due to injury

D. Make the apples looks attractive

Answer: B

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29. Growth can be measured in various ways. Which of these can be used as parameters to measure growth?

A. Increase in cell number

B. Increase in cell size

C. Increase in length and weight

D. All of the above

Answer: D

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30. The term synergistic action of hormones refers to

A. When two hormones act together but bring about opposite effects

B. When two hormones act together and contribute to the same function

C. When one hormone effects more than one function

D. When many hormones bring about any one function.

Answer: B

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31. Plasticity in plant growth means that

A. Plant roots are extensible

B. Plant growth is dependent on the enviornment

C. Stems can extend

D. None of the above

Answer: B

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32. To increase sugar production in sugarcanes, they are sprayed with

A. IAA

B. Cytokinin

C. Gibberellins

D. Ethylene

Answer: C

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33. ABA acts antagonistic to

A. Ethylene

B. Cytokinin

C. Gibberelic acid

D. IAA

Answer: C

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34. Monocarpic plants are those which

A. Bear flowers with one ovary

B. Flower once and die

C. Bear only one flower

D. All of the above

Answer: B

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35. The photoperiod in plants is perceived at

A. Meristem

B. Flower

C. Floral buds

D. Leaves

Answer: D

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36. Photoperiodism was first characterized in

A. Cotton

B. tobacco

C. potato

D. tomato

Answer: B

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37. Phototropic curvature is result of uneven distribution of

A. auxin

B. gibberellins

C. phytochrome

D. cytokinins

Answer: A

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38. Which one of the following synthetic growth regulators is used to promote synchronized flowering in pineapple

A. indolebutyric acid

B. 2-chlorocthylphosphonic acid

C. Benzylaminopurine

D. phenylmercuric acetate

Answer: A

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39. Which one the following plant function is not generally governed or controlled by auxin

A. apical dominance

B. phototropism

C. growth

D. photosynthesis

Answer: D

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40. Function of ABA is

A. apical dominance

B. growth inhibition

C. cell division

D. seed germination

Answer: B

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41. Which of the given is a long day plant

A. Glycine max

B. Spinach

C. Chrysanthemum

D. tobacco

Answer: B

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42. Vernalization stimulates flowering in

A. zamikand

B. turneric

C. carrot

D. ginger

Answer: C

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43. Through their effect on plant growth regiulators, what do the temperature and light control in the plants

A. apical dominance

B. Flowering

C. Closure of stomata

D. Fruit elongation

Answer: B

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44. Which one of the following generally acts as an antagonist to gibberellins

A. Zeatin

B. Ethylene

C. ABA

D. IAA

Answer: C

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45. During seed germination, its stored food is mobilised by

A. Cytokinins

B. ABA

C. gibberellin

D. ethylene

Answer: C

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46. Dr. F. Went noted that is coleoptile tips were removed and placed on agar for one hour , the agar would produce a bending when placed on one side of freshly cut coleoptile stumps .Of what sighifcance is this exeriment

A. it made possible the isolation and exact identification of auxin

B. It is the basis for quantilative determination of small amounts of growth-promoting substances.

C. It supports the hypothesis that IAA is auxin

D. it demonstrated polar movement of auxins.

Answer: A

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47. A few normal seedlings of tomato were kept in a dark room. After few days, they were found to have become white-coloured like albinos. Which of the following terms will you use to describe them ?

A. Mutated

B. Embolised

C. Ethiolated

D. Defoliated

Answer: C

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48. Which one of the following growth regulators is known as 'stress hormone' ?

A. Abscissic acid

B. Ethylene

C. Gas

D. Indole acetic acid

Answer: A

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49. ABA is involved in

A. shoot elongation

B. increased cell division

C. dormancy of seed

D. root elongation

Answer: C

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50. A physiological response of plants to the duration of light and darkness is a

A. daily phase cycle

B. circadian rhythms

C. biological clock

D. photoperiodism

Answer: D

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51. Hypothetical plant hormones are

A. florigen

B. vernalin

C. florigen and vernalin

D. auxin

Answer: C

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52. Auxin can be bioassayed by

A. Lettuce hypocotyle elongation

B. Avena coleoptile curvature

C. Hydroponics

D. Potometer

Answer: B

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53. The bilogical clock measures the length at each night by the

A. relative amount of red absorbing and far-red absorbing phytochrome present at dawn

B. amount of far-red absorbing phytochrome at dusk

C. relative amount of red absorbing and far-red absorbing phytochrome at mid day

D. rate at which all kind of phytochrome is converted to the other

Answer: A

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54. Which one fo the following generally acts as an antagonist to gibberellins ?

A. Zeatin

B. Ethylene

C. ABA

D. IAA

Answer: C

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55. The Avena curvature is used for bioassay of

A. GA_3

B. IAA

C. Ethylene

D. ABA

Answer: B

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56. You are given a tissue with its potential for differentiation in an artificial culture .Which of the following pairs of hormones would you add to the medum to securre shoots as well as roots

A. IAA and gibberellin

B. Auxin and cytokinin

C. Auxin and abscisic acid

D. Gibberellin and abscisic acid

Answer: B

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57. Phytochrome is a

A. Flavoprotein

B. Glycoprotein

C. Lipoprotein

D. Chromoprotein

Answer: D

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58. Which is essential for the growth of root tip ?

A. Zn

B. Fe

C. Ca

D. Mn

Answer: C

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59. Which of the following prevents falling of fruits

OR

Fruit and leaf drop at early stages can be prevented by the application

A. Ethylene

B. auxins

C. gibberellic acid

D. cytokinins

Answer: B

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Assertion Reason Type Question

1. Assertion : Photomorphogenetic responses are controlled by the pigment cytochrome.

Reason :Cytochrome exists in two photoreversible forms

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: D

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2. Assertion : Dry seeds do not germinate

Reason :Water is the most important external factor for seed germination

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: A

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3. Assertion : Ethylene is a gaseous phytohormone

Reason :It promotes ripening of many fruits

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: B

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4. Assertion : Plants usually bend towards the source of light Reason :Shoot apex shows positive phototropism because of differential growth caused due to unequal distribution of auxin.

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: A

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5. Assertion : Auxillary buds, in actively growing herbaceous plants, generally remain dormant

Reason :This is due to apical dominance which is under the influence of auxins

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: A

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6. [A] : Senescence occurs in all non meristematic cells.

[B]: Meristems are potentially immortal.

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: A

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7. Assertion : In the senescence of leaves it is commonly found that the chloroplasts are the last organelles to show clear evidence of death.

Reason :Chloroplasts are the cell organelles which carry genetic material (i.e., chloroplastic DNA)

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: B

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8. Assertion. Plants also have hormones called phyto-hormones. Reason. They increase the rate of reactions and thus always accelerate growth and other related changes

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: C

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9. Assertion : Gibberellins enhance the longitudinal growth of intact plants

Reason :Activity of gibberellins requires the presence of meristems.

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: A

10. Assertion : Abscission zone in leaves is formed across the petiole near its junction with the stem.

Reason :In many compound leaves, each leaflet also forms an abscission zone.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reason are false

Answer: B

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11. Assertion : Plants with poor seed viability and prolonged seed dormancy reproduce mostly by vegetative methods.

Reason :Vegetative propagation is applied for production of an unlimited number of plants within a relatively short time

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: B

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12. Assertion . Senescence is the time when age associated defects are manifested

Reason . Certain genes may be undergoing sequential switching on and off during one's life

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: A

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13. Assertion: Photomodulation of flowering is a phytochrome regulated process.

Reason: Active form of phytochrome (PFR) directly induces floral induction in shoot buds.

A. If both Assetion and Reason are true and the Reason is a correct explanation of the Assertion

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion

C. If Assertion is true but the Reason is false

D. If both Assertion and Reaon are false

Answer: C

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