



BIOLOGY

BOOKS - AAKASH SERIES

PLANT GROWTH AND DEVELOPMENT

Exercise I General Growth

1. The maximum growth rate is observed during

(a) lag phase

(b) log phase

(c) stationary phase

(d) senescence

A. Lag phase

B. Steady phase

C. Log phase

D. Senescent phase

Answer: C



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2. Plant growth is

- A. Irreversible
- B. Increase in size
- C. Localised
- D. All the above

Answer: D



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3. Correct sequence of cellular growth stage is

A. Cell division , Cell differentiaton Cell elongation

B. Cell differntiation , Cell division Cell elongation

C. Cell elongation , Cell division , Cell differntiation

D. Cell division , Cell elongation , Cell differentiation

Answer: D



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4. The correct sequence of stages , through which the plants passes during its life span.

A. Seed → plantlet → seedling →
mature plants

B. Seedling → seed → plantlet →
mature plant

C. Plantlet → seedling → seed →
mature plant

D. Seed → seedling → plantlet →

mature plant

Answer: D



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5. Identify the wrong statement from the following .

A. Both growth and differentiation are open in plants

B. Plants body is made up of derivatives of meristems

C. Secondary growth of leaves is due to the activity of lateral meristem

D. Apical meristems of shoot and root tip cause primary growth

Answer: C



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6. Which of the following can not be taken as parameter of measuring the growth in plant body

A. Fresh (or) dry weight of plants body

B. Thickness of leaf lamina

C. Surface area of leaf lamina

D. Length of root (or) stem

Answer: B



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7. The Shape of growth curve obtained when the length of an organ is plotted against the time is

A. Parabola

B. S' Shape

C. Linear

D. Step wise

Answer: C



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8. Exponential growth is expressed as

A. $Lt = L_0 + rt$

B. $W_1 = W_0 e^{rt}$

C. $W_1 = W_1 + rt$

D. $\log_e \left(\frac{W_0}{W_1} \right) = rt$

Answer: B



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9. The absolute growth rate and relative growth rates of living systems are.

A. Quantitative comparisons

B. Qualitative comparison

C. Both 1 and 2

D. None

Answer: A



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10. During exponential phase of geometrical growth

A. Cell elongate but do not divide

B. Cells divide but do not elongate

C. Both the progeny cells of mitotic division retain the ability of cell division

D. Cell degenerate due to deficiency of nutrients

Answer: C



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11. Water is essential for growth for .

(A) Enlargement of cells.

(B) Turgidity of cells for extension of growth .

(C) Providing medium for enzymatic activities .

(D) The source of energy .

A. All correct except 'A'

B. All correct except 'B'

C. All correct except 'C'

D. All correct except 'D'

Answer: D



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12. $W_1 = W_0 e^{rt}$ is the expression of exponential growth, in which r denotes .

- A. Initial growth
- B. Final growth
- C. Relative growth rate
- D. Base of natural logarithms

Answer: C



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13. The very first event in the sequential stage of development of a higher plant cell is

- A. Elongation
- B. Plasmatic growth
- C. Maturation
- D. Senescence

Answer: B



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14. The ability of producing different kinds of structures at different phases of life is called

A. Plasticity

B. Re-differentiation

C. Plasmacytosis

D. Maturation

Answer: A



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15. Heterophyllous aquatic plants of the following is

A. Cotton

B. Coriander

C. Larkspur

D. Buttercup

Answer: D



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16. Pick out the correct statement from the following .

A. The parenchyma cells undergo
differentiation during plant tissue
culture

B. The tissues arising out of same meristem have always same structures at maturity

C. The products of meristematic cells retain the power of cell division by redifferentiation

D. Epidermis is a product of differentiation

Answer: D



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17. Intracellular intrinsic factor that influence the development in plants is

A. Genetical

B. Chemical

C. Physical

D. Nutritional

Answer: A



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18. Exponential phase of growth among the following is .

A. Lag phase

B. Senescence phase

C. Logarithmic phase

D. Steady state

Answer: C



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19. The kind of growth in unicellular organisms like bacteria is .

A. Logarithmic

B. Arithmetic

C. Geometric

D. Plasticity

Answer: C



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20. The growth in plants is measured by

Pfeiffer's auxanometer

Osmometer

Manometer

Respirometer

A. Pfeiffer's auxanometer

B. Osmometer

C. Manometer

D. Respirometer

Answer: A



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21. Development is the sum of

- A. Cell division and cell elongation
- B. Cell division and cell differentiation
- C. Growth and differentiation
- D. Growth and de - differentiation

Answer: C



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22. Growth is measured by the following parameter

A. Increase in fresh weight , dry weight & length

B. Increase in cell number , cell volume and area

C. Increase in cell volume and dry weight

D. Increase in cell number , volume, area, length, fresh weight and dry weight .

Answer: D



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23. Wound healing in the matured part of the secondary stem occurs due to .

- A. Differentiation
- B. De-differentiation
- C. Re - differentiation
- D. none of the above

Answer: B



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24. Plasticity refers to

A. Ability of the plants to undergo different pathways of metabolism suitable to the environments

B. Ability to exhibit different phase of life to produce different types of structures

C. Ability of plants to grow through out their life

D. 1 & 2

Answer: C



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Exercise I Plant Growth Regulartors General

1. The importance of coleoptile tip in phototropic curvature was first experimentally

confirmed by

A. Julius von Sachs

B. Charles Darwn and Francis Darwin

C. Boysen - Jenson

D. F.W.Went

Answer: B



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2. Which one of the following pairs is not correctly matched ?

A. Adenine derivative - kinetin

B. Carotenoid derivat

C. Terpense - IAA

D. Indole compounds - IBA

Answer: C



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3. Growth promoter hormones are

A. IAA, ABA and CK

B. IAA, GA and ABA

C. IAA, GA and CK

D. ABA, Ck and GA

Answer: C



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4. A green plant bends towards the source of light when exposed to the light on only one side. Which of the following is the best explanation of the phenomenon?

A. The apices of the stems are attracted by light

B. The plant needs light for photosynthesis

C. Auxin accumulates on the shaded side to induce great cell elongation on that side

D. Light reduces length.

Answer: C



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5. All the following pairs are growth promoting activities except

A. Tropic growth and pattern formation

B. Flowering and fruiting

C. Seed formation and seed germination

D. Dormancy and Abscission

Answer: D



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6. FW. Went is associated with

A. Isolation of auxins from the coleptiles

tips of oat seedlings

B. Isolation of auxins form the coleoptiles

tips of canary grass seedling

C. Isolation of Gibberellins from *Gibberella*

fuzikuroi

D. Isolation of auxins from the coleoptiles

of both canary grass and oat seedlings

Answer: A



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7. Which one of the following is not a natural polymer

A. ABA

B. Zeatin

C. 2,4-D

D. N6 - furfuryl amino purine

Answer: D



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8. Choose the incorrect statement from the following

A. Cytokinins show specific effect on cytokinesis

B. ABA is antagonistic phytohormone to Gibberellic acids

C. Natural cytokinins are synthesized in root apices only

D. Ethylene increase absorption surface of root system

Answer: C



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9. Plants hormones are .

A. Growth regulators

B. Growth promoters

C. Growth inhibitors

D. All of these

Answer: D



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10. Choose the correct alternative :

Which one of the following is a natural growth inhibitor ?

1. NAA

2. ABA

3. IAA

4. GA

A. NAA

B. ABA

C. IAA

D. GA

Answer: B



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11. Which one of the following is not correctly matched ?

A. Promote cell division - kinetin

B. Promote senescence - GA

C. Promote flowering - Auxins

D. Promote Abscission - Ethylene

Answer: B



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12. Identify the mismatch of following ?

A. Adenine derivative - kinetin

B. Carotenoid derivative - ABA

C. Terpenes - IAA

D. Indole compounds - IBA

Answer: C



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Exercise I Auxins

1. Phytohormone which inhibits flowering in several plants but stimulates flowering in Pineapple plants is .

A. 2-4 D

B. IBA

C. GA_3

D. Ethylene

Answer: D



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2. Identify a pair of hormones whose effects are opposite to each other regarding apical dominance

A. Auxins and ABA

B. Auxins and Cytokinins

C. Gibberellins and Cytokinins

D. Ethylene and ABA

Answer: B



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3. Removal of apical bud makes the plant

A. Bushy

B. Grow rapidly

C. Grow slowly

D. Dermant

Answer: A



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4. 2,4-D stands for

A. 2,4 - Dichlorophenoxy Acetic Acid

B. 2,4- D Dichloro Butyric Acid

C. 2,4- Dichloronaphthoxy Acetic Acid

D. 2,4- Dichloronaphthalene Acetic Acid

Answer: A



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5. Auxins were first isolated from

A. Coleoptiles of canary grass

B. Coleoptiles of canary Avena

C. Rice seedling

D. Human urine

Answer: D



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6. Which of the following physiological activity is not induced by Auxins in plants

A. Rooting in stem cutting

B. Xylem differentiation

C. Induction of parthenocarpy

D. Induction of abscission of young leaves and fruits

Answer: D



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7. Which of the following physiological activity is not induced by Auxins in plants ?

- A. Indole - 3 -butyric acid
- B. Napthalene acetic acid
- C. 2,3-5 tri chloro phenoxy acetic acid
- D. 2,4 dichloro phenoxy acetic acid

Answer: A



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8. Which of the following is not a functional attribute of auxins ?

- A. Promote premature fruit and leaf fall
- B. Promote mature fruit and leaf fall
- C. Parthenocarpy
- D. Controls xylem differentiation

Answer: A



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9. The hormone widely used in tea plantations for hedge making

A. ABA

B. Auxins

C. GA_3

D. Ethylene

Answer: B



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10. The modified form of adenine is

A. A)2,4 - Dichlorophenoxy acetic acid

B. B)N⁶ - furfuryl amino purine

C. C)2-chloro ethyl phosphonic acid

D. D)Dichloro phenyl methyl urea

Answer: B



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11. Removal of apical bud during pruning results in the

A. Death of plant

B. Early flowering

C. Promotion of lateral branching

D. Promotion of lateral branching

Answer: C



12. A high concentration of synthetic auxins is generally used for .

- A. Regulating the growth of roots
- B. Weed control
- C. Controlling cell enlargement
- D. Preventing the growth of lateral shoots

Answer: B



13. Which one prevents premature fall of fruits

A. IAA

B. Ethylene

C. GA_3

D. Zeatin

Answer: A



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14. Which of the following is not function of auxins ?

- A. Apical dominace
- B. Parthenocarpy
- C. Tropic movements
- D. Bolting

Answer: D



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15. For plants tissue culture which among the following is required ?

A. Trypsin

B. Kinetin

C. Caffeine

D. Cocumarin

Answer: B



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Exercise I Gibberellins

1. Bolting is associated with physiological function of

A. Gibberellic acid

B. Cytokinins

C. IAA

D. ABA

Answer: A



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2. Bakane disease is caused by

A. Fungus

B. Alga

C. Bacterium

D. Virus

Answer: A



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3. Gibberellins were first extracted from

A. Coeloptile tip

B. Root tip

C. Fungus

D. Bacterium

Answer: C



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4. Gibberellic acid was discovered in connection with a disease in rice seedling , caused by a

A. Virus

B. Bacterium

C. Fungus

D. Nematoda

Answer: C



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5. Which of the following plant hormone is used to speed up the malting process in brewing industry?

A. GA_1

B. GA_2

C. GA_3

D. GA_4

Answer: C



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6. Which of the following induces increase in the length of grape stalks :

A. IAA

B. Gibberellins

C. ABA

D. Ethylene

Answer: B



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7. Briefly enumerate on Midbrain of Humans.

A. Auxin

B. ABA

C. Ethylene

D. Cytokinin

Answer: B



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8. Foolish seedling' disease of rice led to the discovery of

A. GA

B. ABA

C. 2,4-D

D. IAA

Answer: A



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9. Which of the PGRs induces parthenocarpy in Tomatoes ?

A. Auxin

B. Gibberellins

C. Cytokinin

D. Ethylene

Answer: A



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

A. Indole acetic acid

B. Gibberellic acid

C. Cytokinins

D. Ethylene

Answer: B



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11. Rosette habit of cabbage can be changed by the application of

A. IAA

B. GA

C. ABA

D. Ethephon

Answer: B



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12. The Phenomenon of elongation of stem in the plants with rosette habit is know as

A. Rosetting

B. Bolting

C. Phase of elongation

D. 1 and 3

Answer: B



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13. The hormones which are found to be more effective in inducing parthenocarpy are

A. Cytokinins

B. Auxins

C. Ethylene

D. Ethephon

Answer: B



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Exercise I Cytokinins

1. Cytokinins

- A. Promote abscission
- B. Influence water movement
- C. inhibit protoplasmic streaming
- D. help retain chlorophyll

Answer: D



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2. The first natural cytokinin of plants is

A. zeatin

B. kinetin

C. dihydrooxyzeation

D. riboxylzeatin

Answer: A



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3. Cytokinins are mostly produced in

A. Shoot apex

B. Root apex

C. old leaves

D. Ripe fruits

Answer: B



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4. Cytokinins are generally

A. Acids

B. Aminopurines

C. Phenols

D. Glucosides

Answer: B



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5. PGR which induces the formation of new leaves and chloroplast in leaves is

A. Cytokinins

B. Ethylene

C. Gibberellins

D. Abscisic acid

Answer: D



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6. One hormone helps to produce new leaves, while the other promotes abscission of leaves .

These are respectively

A. ABA and Auxins

B. Cytokinins

C. Gibberellins and cytokinins

D. Etylene and Gibbenllins

Answer: B



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7. Natural cytokinins are synthesized in tissue that one

- A. Senescent
- B. Dividing rapidly
- C. Storing food material
- D. Differentiating

Answer: B



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8. Hormone primarily concern with cell division is

A. IAA

B. NAA

C. Cytokinin/zeation

D. Gibberellic acid

Answer: C



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9. Which of the following is a cytokinin ?

A. Phytochrome

B. Leucine

C. Ethylene

D. Zeatin

Answer: D



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10. Out or excised leaves remain green for long if induced to root or dipped in

A. Gibberellins

B. Cytokinins

C. Auxins

D. Ethylene

Answer: B



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Exercise I Ethylene

1. Name the hormone which stimulates transverse or isodiametric growth

A. Ethylene

B. ABA

C. Sodium salt of NAA

D. Ethephon

Answer: A



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2. Ethylene is

- A. Neither a growth promoter nor growth inhibitor
- B. A nitrogenous phytohormone
- C. A gaseous phytohormone that hastens fruits ripening
- D. A volatile phytohormone that caused wounds in plants body

Answer: C



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3. Phytohormone responsible for 'Respiratory climactic ' is .

A. ABA

B. Ethylene

C. GA_3

D. IAA

Answer: B



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4. Ethylene is highly effective in

- A. Root growth and root hair formation
- B. Abscission of plants organs
- C. Apical hook formation in dicot seedlings
- D. Fruit ripening

Answer: D



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5. Which of the following is not the physiological effect of Ethylene ?

A. Increasing absorption surface of root

B. Elongation of apple fruits

C. Enhances rate of respiration during fruit ripening

D. Petiole elongation in deep water rice plants

Answer: B



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6. One hormone helps in ripening of fruits and other brings about stomatal closure. They are respectively

- A. ABA and Auxin
- B. Ethylene and ABA
- C. ABA and Ethylene
- D. GA and ABA

Answer: B



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7. The gaseous fruit ripening phytohormone is

A. Ethylene

B. Kinetin

C. GA

D. ABA

Answer: A



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8. Ethylene is liberated during

- A. Developing seeds
- B. Ripening in some fruits
- C. Developing ovules
- D. Germinating seeds

Answer: B



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Exercise I Aba

1. A growth inhibitor responsible for stomatal closure is

A. Zeatin

B. Abscisic acid

C. Ethylene

D. GA_3

Answer: B



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2. Abscisic acid controls/ promotes

A. Cell division

B. Dormancy

C. Shoot elongation

D. Cell elongation and wall formation

Answer: B



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3. Which one is antagonist to GAs

A. NAA

B. Zeatin

C. ABA

D. Ethylene

Answer: C



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4. The dormancy of potato tubers can be increased by the spray of .

A. Auxins and Gibberellins

B. Gibberellins

C. Auxins and cytokinins

D. ABA

Answer: D



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5. Closure of stomata is brought about by

A. Abscisic acid

B. Kinetin

C. Giberellin

D. IBA

Answer: A



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Exercise I Dormancy

1. A seed unable to germinate because the external conditions are not favourable is called .

A. Climacteric C

B. Quiescence

C. Dormancy

D. Scarification

Answer: B



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2. Seed dormancy is due to the presence of hard seed coats, in the members of .

A. Fabaceae

B. Solanaceae

C. Liliaceae

D. Malvaceae

Answer: B



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Exercise I Photoperiodism

1. If flowering is either quantitatively or qualitatively dependent on exposure to low temperature, this phenomenon is termed as

A. Vernalisation

B. Dormancy

C. Quiescence

D. Photoperiodism

Answer: A



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2. The phenomenon of the influence of relative duration of day and night on flowering is called

A. Vernalisation

B. Geotropism

C. Phototropism

D. Photoperiodism

Answer: D



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3. The site of perception of light/dark duration are the

A. Leaves

B. Buds

C. Branches

D. Stem

Answer: A



4. Which is not affected by light ?

A. Photosynthesis

B. Flowering

C. Fertilization

D. Transpiration

Answer: C



5. Effect of day length duration duration of plant development is .

A. Chemotropism

B. Phototropism

C. Photoperidism

D. Photonasty

Answer: C



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6. Long day plants blossom in

A. Summer

B. Autumn

C. Spring

D. 1 and 3

Answer: A



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Exercise I Vernalization

1. Flowering dependent on low temperature exposure is

A. Vernalisation

B. Thermotropy

C. Cryoscopy

D. Cryostat

Answer: A



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2. Vernalisation is

A. Growth curve related to light

B. Effect of photoperiods of plants growth

C. Speeding up ability to flower by low
temperature treatment

D. Diurnal photoperiodicity

Answer: C



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Exercise II Auxins

1. Who experimentally proved that the auxins were responsible for the apical dominance

A. L.G. Paleg

B. Thimann and Skoog

C. Skoog and Miller

D. Burg and thiman

Answer: B



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2. The importance of coleoptile tip in phototropic curvature was first experimentally confirmed by

A. Julius von Sachs

B. Charles Darwin and Francis Darwin

C. Boysen - Jenson

D. F.W.Went

Answer: B



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3. Which one of the following statement concerning growth regulators is incorrect .

A. Gibberellins cause the formation of more male flowers in Cannabis

B. Abscisic acid maintains seeds in a dormant state

C. Cytokinins increase the K^+ concentration in guard cells

D. Some synthetic auxins control grass weeds in pulse crops

Answer: D



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4. Study the following statements and select the correct ones

A. Auxin is transported from base to tip in large quantities

B. Cells on the dark side expand further than those on the light side

C. Apical dominance can be removed by the decapitation

D. Tropic movements in plants are under the control of gibberellins

Answer: C



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5. Which one of the following pairs is not correctly matched ?

A. Adenine derivative - kinetin

B. Carotenoid derivative - ABA

C. Terpenes - IAA

D. Indole compounds - IBA

Answer: C



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6. Darwin discovered that canary grass coleoptile bends towards light only when .

A. It is 5 cm long

B. The seedling is growing in blue light

C. Coleoptile tip is intact and exposed to
light

D. Cooler nights

Answer: C



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7. Removal of apical bud makes the plant

A. Bushy

B. Grow rapidly

C. Grow slowly

D. Dormant

Answer: A



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8. Bioassay for auxin is

- A. Dwarf maize test
- B. *Avena curvatura* test
- C. Cell division test
- D. Green leaf test

Answer: B



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9. 2,4-D stands for

A. 2,4-Dichlorophenoxy Acetic Acid

B. 2,4-Dichloro Butyric Acid

C. 2,4 - Dichloronaphthoxy Acetic Acid

D. 2,4-D-chloronaphthalene Acetic Acid

Answer: A



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10. Hormone that breaks dormancy of potato tuber is

A. IAA

B. ABA

C. Zeatin

D. Gibberellin

Answer: A



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11. Abscission layer is formed when the concentration of

- A. Auxin increases
- B. Auxin decreases
- C. Gibberellins decreases
- D. Gibberellins increases

Answer: B



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Exercise II Gibberellins

1. Bolting is associated with physiological function of

A. Gibberelic acid

B. Cytokinins

C. IAA

D. ABA

Answer: A



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2. Physiological function of the phytohormone , that is synthesized from acetly co - enzyme A molecules is

- A. Promotion of seed germination
- B. Promotion of apical dominance
- C. Removal of apical dominance
- D. Promotion of triple response growth

Answer: A



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3. α -amylase synthesis is promoted by

- A. Cytokinins
- B. Abscisic acid
- C. Gibberellins
- D. Auxin

Answer: C



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4. Which of the following is not related to Gibberelin ?

- A. Bolting of rosette plants
- B. Replacing long day requirement
- C. Removal of genetic dwarfism
- D. Bending movement of coleoptile

Answer: D



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5. Dwarfness can be controlled by treating the plant with

- A. Cytokinin
- B. Gibberellic acid
- C. Auxin
- D. Antigibberellin

Answer: B



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6. The Phenomenon of elongation of stem in the plants with rosette habit is know as

- A. Rosetting
- B. Bolting
- C. Phase of elongation
- D. 1 and 3

Answer: B



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7. Which one is the test for gibberellin ?

A. Bolting in cabbage

B. Morphogenesis in carrot cells

C. Rapid divisions in carrot cells

D. Elongation of oat coleoptile

Answer: A



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8. Exogenous GA induce formation of male flowers on genetically female plants of

A. Cucurbita

B. Luffa

C. Cucumis

D. Carica

Answer: C



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9. The hormones which are found to be more effective in inducing parthenocarpy are

A. Cytokinins

B. Gibberellins

C. Ethylene

D. Ethephon

Answer: B



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10. Gibberellic acid induces flowering in

A. Some plants only

B. In long day plants under short day conditions

C. In short day plants under long day condition

D. Day neutral plants

Answer: B



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11. Bakanae disease is caused by

A. Fungus

B. Alga

C. Bacterium

D. Virus

Answer: A



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12. Gibberellins were first extracted from

A. Coeloptile tip

B. Root tip

C. Fungus

D. Bacterium

Answer: C



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Exercise II Cytokinins

1. Richmond- Lang effect is related to .

A. Auxins

B. Gibberellins

C. Cytokinins

D. ABA

Answer: C



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2. The first cytokinin was isolated by

A. Skoog (1970)

B. Evins , 1971

C. Miller etal (1954)

D. Leopoid (1969)

Answer: C



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3. Cytokinins

A. Promote abscission

B. Influence water movement

C. inhibit protoplasmic streaming

D. help retain chlorophyll

Answer: D



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4. The first natural cytokinin of plants is

A. Zeatin

B. kinetin

C. dihydrooxyzeation

D. Riboxylzeatin

Answer: A



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5. Cytokinins are mostly produced in

A. Shoot apex

B. Root apex

C. Young leaves

D. Lateral buds

Answer: B



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6. Cytokinins

A. Induce cell division and inhibit ageing

B. Maintain dormancy

C. Induce abscission

D. Inhibit cell division

Answer: A



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7. Cytokinins are generally

A. Acids

B. Aminopurines

C. Phenols

D. Glucosides

Answer: B



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8. Knowledge about cytokinin was gained after skoog's work on

- A. Tomato pith
- B. Tobacco pith
- C. Rice seedling
- D. Avena curvature test

Answer: B



9. Hormone primarily connected with cell division in

A. IAA

B. NAA

C. Cyokinin/zeatin

D. Gibberllic acid

Answer: C



10. Which of the following is a cytokin

A. Phytochrome

B. Leucine

C. Ethylene

D. Zeatin

Answer: D



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11. The compounds having a highly specific hydro-philic group are named as

A. Auxins

B. Cytokinins

C. Gibberellins

D. Ethylene

Answer: B



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12. Out or excised leaves remain green for long if induced to root or dipped in

A. Gibberellins

B. Cytokinins

C. Auxins

D. Ethylene

Answer: B



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13. Maximum concentration of cytokinins occurs in

A. Growing embryos and fruits

B. Apical buds

C. Lateral buds and fruits

D. Root tips

Answer: A



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14. Morphogenesis is controlled by an interaction between

- A. Auxins and gibberellins
- B. Auxins and cytokinins
- C. Gibberellins and cytokinins
- D. None of these above

Answer: B



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15. The phenomenon of delay of senescence by cytokinins is known as

- A. Richmond lang effect
- B. Senescence of effect
- C. Loomis and Torry effect
- D. Sorokin et al effect , 1962

Answer: A



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16. The regulator which retards ageing/senescence of plant parts is

- A. Cytokinin
- B. Auxin decreases
- C. Gibberellins
- D. Abscisis acid

Answer: A



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17. The hormones which regulate phloem transport are

A. Auxins

B. Cytokinins

C. Gibberellins

D. Ethylene

Answer: B



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18. For plant tissue culture which among the following is required ?

A. Trypsin

B. Kinetin

C. Caffeine

D. Cocumarin

Answer: B



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19. Cytokinin synthesis is maximum in

A. Roots

B. Leaves

C. Shoot tip

D. Fruit

Answer: A



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20. Phytohormone which inhibits flowering in several plants but stimulates flowering in Pineapple plants is .

A. 2-4, D

B. IBA

C. GA3

D. Ethylene

Answer: D



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21. Name the hormone which stimulates transverse or isodiametric growth

A. Ethylene

B. ABA

C. Sodium salt of NAA

D. Ethephon

Answer: A



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22. Fruit ripening is accelerated by

A. Ethylene

B. kinetin

C. GA

D. ABA

Answer: A



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23. Ethylene is a by product of

- A. Developing seeds
- B. Ripening in some fruits
- C. Developing ovules
- D. Germinating seeds

Answer: B



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24. Which is not affected by light ?

- A. Photosynthesis

B. Flowering

C. Fertilization

D. Transpiration

Answer: C



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25. Ethylene is liberated during

A. Developing seeds

B. Ripening in some fruits

C. Developing ovules

D. Germinating seeds

Answer: B



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26. Ethylene gas

A. Is saturated hydrocarbon

B. Slows down ripening of apples

C. Retards ripening of tomatoes

D. Speeds up maturation of fruits

Answer: A



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Exercise II Aba

1. Part of the plant body where Abscisic acid is not synthesized but Cytokinin are synthesized is

A. Leaves

B. Flower

C. Roots

D. Seeds

Answer: C



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2. A growth inhibitor responsible for stomatal closure is

A. Zeatin

B. Abscisic acid

C. Giberellin

D. IBA

Answer: B



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3. Abscisic acid promotes

A. Cell division

B. Leaf fall senescence and dormancy

C. Shoot elongation

D. Cell elongation and formation

Answer: B



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4. Closure of stomata is brought about by

A. Abscisic acid

B. kinetin

C. Giberellin

D. IBA

Answer: A



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5. Hormone responsible for ageing is

A. GA

B. IAA

C. ABA

D. Cytokinin

Answer: C



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Exercise II Photoperiodism

1. A long day plant is

A. Wheat

B. Soyabean

C. Tobacco

D. Xanthium

Answer: C



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2. Pick up the correct explanation

A. Xanthium - Long dry plant

B. Sunflower - short day plant

C. Wheat - Short day plant

D. Tomato - Day neutral plant

Answer: D



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3. In short day plants (SDP) flowering is induced by

A. Photoperiod less than 12 hours

B. Photoperiod below a critical length and uninterrupted long night

C. Long night

D. Long day

Answer: B



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4. DNP is

A. Cestrum

B. Cucumber

C. Potato

D. Radish

Answer: B



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5. In short day plants, flowering is inhibited by

A. Spring

B. Summer

C. Autumn

D. 1 and 2

Answer: A



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6. Effect of day length duration of plant development is .

A. Chemotropism

B. Phototropism

C. Photoperiodism

D. Photosynthesis

Answer: B



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7. The most effective wavelength of light for flowering are

- A. Blue and red
- B. Red
- C. Green
- D. Orange and red

Answer: B



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8. Phytochrome is

- A. Light receptor
- B. Dark receptor
- C. Photosynthetic pigment
- D. A light sensitive hormone

Answer: A



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9. Phytochrome is mainly involved in picking stimulus in

A. Phototropism

B. Phototropism

C. Photorespiration

D. Photosynthesis

Answer: C



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10. Phytochrome is a

- A. Protein
- B. Pigment
- C. light sensitive movement
- D. Hormone induced process

Answer: A



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11. tr interconversion is regulated by

A. ABA

B. 2,4-D

C. IAA

D. GA

Answer: D



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12. Phytochrome in plants is sensitive to

A. Green light

B. Blue light

C. Red light

D. Red and far - red light

Answer: D



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13. Photoperiodism is probably due to the synthesis of

A. Cytokinins

B. Gibberellins

C. Auxin

D. Florigen

Answer: D



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14. The hormone capable of replacing the requirement of long photoperiod for flowering is:

A. Ethylene

B. Auxin

C. Gibberellin

D. Cytokinin

Answer: C



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Exercise II Vernalization

1. Flowering dependent on low temperature exposure is

A. Vernalisation

B. Thermotropy

C. Cryoscopy

D. Cryostat

Answer: A



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2. The terms "vernization" was coined by

A. Garner and Allard

B. Darwin

C. Geoffery

D. Lysenko

Answer: D



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3. Vernalisation is

- A. Growth curve related to light
- B. Effect of photoperiods of plants growth
- C. Speeding up ability to flower by low temperature treatment
- D. Diurnal photoperiodicity

Answer: C



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4. Vernalisation can often be replaced by

A. Auxin

B. Cytokinins

C. Gibberellins

D. Ethylenis

Answer: C



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5. The stimulus responsible for vernalization is

A. Phytochrome

B. Vernalin

C. Florigen

D. None of these

Answer: B



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6. The stimulus of cold treatment (vernalisation) is perceived by

A. Leaves

B. Shoot apex

C. Axillary buds

D. Stem

Answer: B



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7. Low temperature required for vernalization is usually between

A. $10 - 10^{\circ} C$

B. $5 - 15^{\circ} C$

C. $1 - 30^{\circ} C$

D. $1 - 5^{\circ} C$

Answer: D



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8. The plant substance which become accumulated during adverse conditions are

A. 1)Abscisic acid

B. 2)Phenolic inhibitors

C. 3)Auxins

D. 4)Cytokinins

Answer: B



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9. In autumn , leaf fall occurs because

A. Formation , of abscission layer at the
base of leaves

B. Leaf becomes heavy

C. Leaf does not remain green

D. Of low temperature

Answer: A



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Exercise II Pgr 5

1. Growth promoter hormones are

A. IAA, ABA and CK

B. IAA, GA and ABA

C. IAA, GA and CK

D. ABA, CK and GA

Answer: A



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2. Match the following .

List - 1

List - 2

1) Auxin

p) GA_3

2) Gibberellin

q) Indole acetic acid

3) Cytokinin

r) Abscisic acid

4) Dormin

s) Acetic acid

t) Zeatin

The correct match is .

A. a-q,b-r,c-p,d-t

B. a-q,b-p,c-t,d-r

C. a-q,b-s,c-p,d-t

D. a-q,b-t,c-p,d-r

Answer: C



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3. Which amongst the following is a natural growth regulator

A. NAA

B. Ethylene

C. 2,4-D

D. Benzaldehyde

Answer: B



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4. Sprouting of potato can be prevented in storage by

- A. Malic hydrazide
- B. Gibberellins
- C. Indole acetic acid
- D. Cytokinins

Answer: A



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Exercise Iii Previous Aipmt Neet Questions

1. Root hairs develop from the region of

A. Maturation

B. Elongation

C. Root cap

D. Meristematic activity

Answer: A



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2. Fruit and leaf drop at early states can be prevented by the application of ::

A. 1)Cytokinins

B. 2)Ethylene

C. 3)Auxins

D. 4) Gibberellic acid

Answer: C



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3. The Avena curvature is used for bioassay of

A. Ethylene

B. ABA

C. GA_3

D. IAA

Answer: D



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4. Auxin can be bioassayed by

A. Potometer

B. Lettuce hypocotyl elongation

C. Avena coleoptile curvature

D. Hydroponics

Answer: C



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5. What causes a green plant exposed to the light on only one side, to bend toward the source of light as it grows ?

A. Light stimulates plant cells on the lighted side to grow faster

B. Auxin accumulates on the shaded side , stimulating

C. Green plants need light to perform photosynthesis

D. Green plants seek light because they are phototropic .

Answer: B



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6. Typical growth curve in plants is

A. Stair -steps

B. Parabolic

C. Sigmoid

D. Linear

Answer: C



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7. Which one of the following growth regulators is known as stress hormones ?

A. Abscisic acid

B. Ethylene

C. GA_3

D. Indole acetic acid

Answer: A



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8. Dr. F. Went noted that if 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 significance is this experiment

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

B. It is the basis for quantitative determination of small amounts of growth - promoting substance .

C. It supports the hypothesis that IAA is auxin

D. It demonstrated polar movement of auxins

Answer: A



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9. During seed germination its stored food is mobilized by

A. ABA

B. Gibberlin

C. Ethylene

D. Cytokinin

Answer: B



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10. Vernalisation stimulates flowering in

A. Zamikand

B. Turmeric

C. Carrot

D. Ginger

Answer: C



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

A. Apical dominace

B. Flowering

C. Closure of stomata

D. Fruit elongation .

Answer: B



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12. 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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13. Root development is promoted by -

A. Abscisic acid

B. Auxin

C. Gibberellin

D. Ethylen

Answer: D



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14. One of the commonly used plant growth hormone in tea plantation is

A. Ethylene

B. Abscisic acid

C. Zeatin

D. Indole - 3 - acetic acid

Answer: D



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15. Coiling of garden pea tendrils around any support is an example

A. Thigmotaxis

B. Thigmonasty

C. Thigmotropism

D. Thermotaxis

Answer: C



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16. Phototropic curvature is the result of uneven distribution of

A. Gibberellin

B. Phytochrome

C. Cytokinins

D. Auxin

Answer: D



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17. Which one of the following acids is a derivative of carotenoids?

A. Indole - 3-acetic acid

B. Gibberellic acid

C. Abscisic acid

D. Indole butyric acid

Answer: C



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18. One of the synthetic auxin is

A. IAA

B. GA

C. IBA

D. NAA

Answer: D



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19. Senescence as an active developmental 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: C



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20. Importance of day length (photoperiodism) in flowering of plants was first shown in

A. Cotton

B. Petunia

C. Lemna

D. tobacco

Answer: D



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21. The wavelength of light absorbed by Pr form of phytochrome is (A) 680 nm (B) 720 nm (C) 620nm (D) 640nm

A. 680 nm

B. 720 nm

C. 620 nm

D. 640 nm

Answer: A



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22. Which one of the following pairs is not correctly matched ?

A. Gibberellic acid - Leaf fall

B. Cytokinin - Cell division

C. IAA -Cell wall elongation

D. Abscisic acid - Stomatal closure

Answer: A



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23. Opening of floral buds into flowers, is a type of

- A. autonomic movement of variation
- B. paratonic movement of growth
- C. autonomic movement of growth
- D. autonomic movement of locomotion

Answer: C



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24. An enzyme that stimulates germination of barley seeds is

A. invertase

B. α - amylase

C. lipase

D. protease

Answer: B



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25. Farmers in a particular region were concerned that pre-mature yellowing of leaves of a pulse crop might caused decrease in the yield. Which treatment could be most beneficial to obtain maximum seed yield?

A. Application of iron magnesium to promote synthesis of chlorophyll

B. Frequent irrigation of the crop

C. Treatment of the plants with cytokinins

along with a small dose of nitrogenous

fertilizer

D. Removal of all yellow leaves and spraying

the remaining green leaves with 2,4,5-

trichlorophenoxy acetic acid .

Answer: C



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

A. It releases wound hormones

B. It induces the differentiation of new shoots from the rootstock

C. It frees axillary buds from apical dominance.

D. The apical shoot grows faster after pruning.

Answer: C



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27. Treatment of seed at low temperature under moist conditions to break its dormancy is called

A. stratification

B. scarification

C. vernalization

D. chelation

Answer: A



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