**TOPIC: TRANSPORT IN PLANTS, MINERAL NUTRITION; PLANT GROWTH AND DEVELOPMENT**

**UNIT NO: B-06**

1. Which of the following is incorrect about diffusion?

A. Molecules move in random fashion B. It occurs from higher to lower concentration

C. It is a slow process D. It does not depend on living system

E. Protein carries are required F. It is a passive process

G. No energy is utilized during this process

1. All except A, B, C 2. Only E and G 3. All except C, D, E 4. E, F and G

1. Cytoplasmic streaming is easily seen in

1. Leaf of *Hydrilla* 2. Leaf of mango 3. Stem cells of sunflower 4. Pollen grains

1. Find out incorrect statements from the following

1. The diffusion of any substance across the membrane depends upon solubility in lipids

2. Substances soluble in lipids diffuse through the membrane faster than substances insoluble in lipids

3. Membrane protein provide sites for hydrophilic substance to cross membrane

4. Facilitated diffusion do not require concentration gradient

1. Rate of diffusion depends upon which of the following except

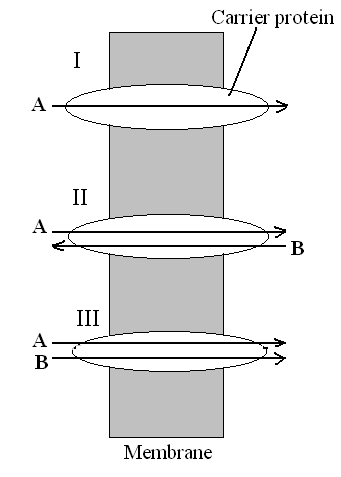
1. Concentration gradient 2. Temperature and pressure

3. Permeability of membrane 4. Respiration

1. Major similarity between active transport and facilitated diffusion is that

1. Both consume ATP 2.Both are passive

3. Both are non-selective 4. Both require membrane proteins



1. Identify the types of passive movements with reference to I, II and III

1. I – Uniport; II – Symport; III – Antiport

2. I – Symport; II – Uniport; III – Antiport

3. I – Uniport; II – Antiport; III – Symport

4. I – Symport; II – Antiport; III – Uniport

1. Carrier proteins in the membrane, responsible for facilitated diffusion and active transport, show some common characteristic except

1. Being highly selective 2. Being regulated by hormones

3. Sensitive to inhibitor 4. Being liable to saturate

1. A transport which uses energy to pump molecules against a concentration gradient is known as

1. Diffusion 2. Facilitated diffusion 3. Active transport 4. All

1. Identify A, B, C and D shown in this table:

|  |  |  |  |
| --- | --- | --- | --- |
| Property | Simple diffusion | Facilitated diffusion | Active transport |
| Requires special membrane proteins | A | Yes | Yes |
| Highly selective | No | Yes | Yes |
| Transport Saturates | No | B | Yes |
| Uphill transport | No | No | C |
| Requires ATP energy | No | D | Yes |

1. A- No, B-Yes, C-Yes, D- No 2. A-Yes, B-No, C-Yes, D- No

3. A-No, B-Yes, C-Yes, D- Yes 4. A- Yes, B-Yes, C-Yes, D- Yes

1. Which of the following has maximum water potential?

1. Pure honey 2. Xylem element 3. 20% salt solution 4. Phloem sap

1. Water potential of pure water and turgid cell respectively are

1. 0 and 1.0 2. 1.0 and 0 3. 0 and 0 4. 1.0 and 1.0

1. There are two inter connecting cells A and B. In cell A if Ψs is -1000 Pa and Ψp is 500 Pa and in cell B if Ψs is -200 Pa and Ψp is 100 Pa then direction of movement of water is

1. Cell A to cell B 2. Cell B to cell A

3. Either A to B or B to A 4. No net movement of water molecules

1. Select the incorrect statement from the following :

A. A watermelon has over 92% water

B. Most herbaceous plants have only about 10-15% of its fresh water as dry matter

C. Woody parts of the plant have very little water

D. Seeds do not contain any water

E. Mature corn plant absorb almost thirty three liters of water in a day

F. Mustard plant absorb water equal to its own weigh in about 15 hours

1. A, B and C 2. D, E and F 3. D and E 4. E and F

1. Water is often a limiting factor for plant growth and ------ in both ------- and --------- environments

1. Productivity, agricultural, natural 2.Movement, agricultural, artificial

3. Photosynthesis, aquatic, terrestrial 4.Senescence, agricultural, natural

1. Two main components which determine water potential are

1. Solute potential and Matric potential 2. Pressure potential and Matric potential

3. Pressure potential and Solute potential 4. Pressure potential and Turgor pressure

1. Pressure potential is \_\_\_\_ and solute potential is \_\_\_\_\_

1. Positive, Negative 2. Negative, Negative

3. Negative, Positive 4. Positive, Positive

1. Type of water available for the plants from soil is

1. Runoff water 2. Hygroscopic water

3. Capillary water 4. Gravitational water

1. Assertion: Balsam plant experiment demonstrates transport of water through phloem

Reason: Girdling experiment explains food transport though xylem

1. Both assertion and reason are correct and reason is the correct explanation of assertion

2. Both assertion and reason are correct but reason is not the correct explanation of assertion

3. Assertion is true and reason is wrong 4. Both assertion and reason are false

1. The space between the cell wall and shrunken protoplast is occupied by

1. Hypotonic solution 2. Hypertonic solution 3. Isotonic solution 4. Pure water

1. Water potential of a solution increases when

1. Pressure greater than atmospheric pressure is applied to pure water

2. Pressure greater than atmospheric pressure is applied to hypertonic solution

3. Pressure lesser than atmospheric pressure is applied to hypertonic solution

4. Pressure lesser than atmospheric pressure is applied to pure water

1. Osmosis is

1. Movement of water across impermeable membrane

2. Diffusion of water across differentially permeable membrane against the pressure gradient

3. Movement of substances across the permeable membrane

4. Movement of water from hypotonic solution to hypertonic solution through a membrane

1. Pressure exerted by the protoplast due to the entry of water against the cell wall is

1. Osmotic pressure 2. Turgor pressure 3. Imbibition pressure 4. Wall pressure

1. Plasmolysis is the process of

1. Shrinkage of cell wall when cells are kept in hypertonic solution

2. Shrinkage of protoplast when cells are kept in hypotonic solution

3. Shrinkage of protoplast when cells are kept in isotonic solution

4. Shrinkage of protoplast when cells are kept in hypertonic solution

1. Assertion: Plasmolysis is the process of shrinkage of protoplast when cells are kept in hypertonic solution

Reason: Plasmolysis is due to the process of when water moves out by endosmosis

1. Both assertion and reason are correct and reason is the correct explanation of assertion

2. Both assertion and reason are correct but reason is not the correct explanation of assertion

3. Assertion is true and reason is wrong 4. Both assertion and reason are false

1. Germination of seed associates with which of the following processes?

1. Imbibition of water into the seed 2. Swelling of seed

3. Bursting of seed coat 4. All these

1. Endodermis of roots is impervious due to

1. Suberin deposition 2. Casparian strip 3. Lignification 4. Both 1 and 2

1. When substances move in bulk or ‘en masse’ from one point to another is called \_\_\_\_\_\_ and is due to \_\_\_\_\_\_\_\_ difference between two points

1. Mass flow, osmotic potential 2. Mass flow, imbibition pressure

3. Mass flow, pressure 4. Translocation, wall pressure

1. Bulk flow can be achieved by

1. Positive hydrostatic pressure gradient as in garden hose

2. Negative hydrostatic pressure gradient (suction) as flow of water through river

3. Both 1 and 2 4. None of these

1. Complete apoplastic pathway in the plant body is not possible due to presence of

1. Loosely arranged cortex 2. Compactly arranged endodermis

3. Lignified walls of xylem or tracheary elements 4. Compactly arranged cortex

1. Stomata helps in

1. Translocation 2. Exchange of gases 3. Osmosis 4. Imbibition

1. Chlorosis is associated with deficiency of

1. N, K, Mg, Fe, Zn 2.Cu, Ca, K, Ni, Mo 3.S, Ca, Fe, Mn, B 4.B, Ca, N, Ni, Cd

1. Boron is associated with which of the following except

1. Pollen and utilization of Ca++ 2. Pollen germination

3. Carbohydrate translocation 4. Oxygen evolution during photosynthesis

1. Nicikel is component of ------- enzyme

1. Nitrogenase 2. Urease 3. RuBisCo 4.PEP carboxylase

1. Critical concentration refers to the concentration

1. Below which plant growth is increased 2. Below which plant growth is retarded

3. Above which plant growth is increased 4. Above which plant growth is retarded

1. Select the correctly matched pair

1. Zinc - Helps to maintain the ribosome structure.

2. Magnesium - Needed during the formation of mitotic spindle.

3. Calcium - Plays a role in the opening and closing of stomata

4. Manganese - Needed in the splitting of water to liberate oxygen during photosynthesis

1. Deficiency symptoms of element tend to appear first in young leaves. It indicates that the element is relatively immobile. Which of one the following elemental deficiency would show such symptoms?

1. Sulphur 2. Magnesium 3. Nitrogen 4. Potassium

1. Function of leghaemoglobin in root nodules of legume is

1. Scavenger for oxygen 2. Inhibition of nitrogenase activity

3. Expression of nif gene 4. Root nodule formation

1. Entry and exit of ions through symplast require ……..a……… and hence is …….b…… process

1. a=Metabolic energy; b=Passive or active 2. a=Photochemical energy; b=Passive

3. a=Metabolic energy; b=Active 4. a=Light energy; b=Passive

1. Manganese toxicity leads to deficiency of

1. Cl, K, Cu 2. Ni, B, Mg 3. C, H, O 4. Mg, Ca, Fe

1. Assertion: Deficiency of Ca and S is identified in younger parts of plants first

Reason: Ca and S are generally less mobile elements in the plants

1. Both assertion and reason are true and reason is the correct explanation of assertion

2. Both assertion and reason are true and but reason is not the correct explanation of assertion

3. Assertion is true and reason is false 4. Both assertion and reason are false

1. With regard to biological nitrogen fixation by Rhizobium in association with soya bean, which one of the following statements does not hold true

1. Nitrogenase may require oxygen for its functioning

2. Nitrogenase is Mo-Fe protein

3. Leg-Haemoglobin is a pink coloured pigment

4. Nitrogenase helps to convert N2 gas in to two molecules of ammonia

1. Assertion: Biological nitrogen fixation is done by different microorganisms like bacteria, BGA and fungi

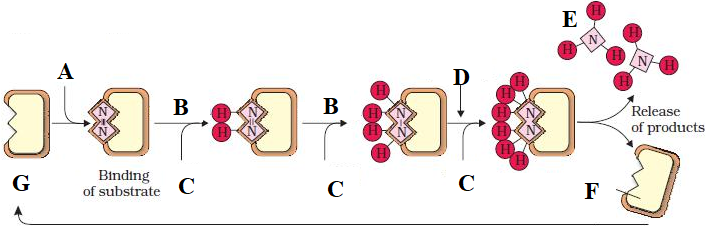
Reason: Biological nitrogen fixation is only by non-symbiotic process

1. Both assertion and reason are true and reason is the correct explanation of assertion

2. Both assertion and reason are true and but reason is not the correct explanation of assertion

3. Assertion is true and reason is false 4. Both assertion and reason are false

1. Identify the labelled diagrammatic representation of nitrogen fixation



1. A=Nitrogenase; B=Reduction; C= 2O; D=Reduction; E=Product; F=Free Nitrogenase; G=Substrate

2. A=N2; B=Reduction; C=2H; D=Oxidation; E=Product; F=Free Nitrogenase; G=Nitrogenase

3. A=Gaseous N2; B=Oxidation; C= 2H; D=Reduction; E=Product; F=Free Nitrogenase; G=Nitrogenase

4. A=Gaseous N2; B=Reduction; C= 2H; D=Reduction; E=NH3; F=Free Nitrogenase; G=Nitrogenase

1. If by radiation all nitrogenase enzyme is inactivated, then there will be no

1. Biological fixation of nitrogen in legumes 2. Fixation of atmospheric nitrogen

3. Conversion from nitrate to nitrite in legumes. 4. Conversion from ammonium to nitrate in soil

1. Rubisco and PEPco enzymes associated with photosynthesis are activated by

1. Mn 2. C and O 3. Mg 4. Zn

1. In which of the following plants biological symbiotic nitrogen fixation occurs?

a. Sweet clover b. Sweet pea c. Lawn grass d. Broad bean e. Clover bean

f. Green gram g. Common grass h. Alfalfa i. Lentil j. *Mangifera*

1. All except c, g, j 2. All except c, g, i 3. All except c, g 4. All except a, b

1. Which of the following statements is true?

1. Conversion of atmospheric nitrogen into nitrate is called biological nitrogen fixation

2. Conversion of oxides of nitrogen into ammonia is called biological nitrogen fixation

3. Conversion of ammonia into nitrate by *Pseudomonas* is called nitrification

4. Conversion of organic nitrogen into ammonia is called ammonification

1. Assertion: Insectivorous plants grow in nitrogen deficient areas found only in aquatic ecosystems

Reason: Captured insects provide source of phosphate for the plants

1. Both assertion and reason are true and reason is the correct explanation of assertion

2. Both assertion and reason are true and but reason is not the correct explanation of assertion

3. Assertion is true and reason is false 4. Both assertion and reason are false

1. Free living bacteria that can fix N2 in soil are

1. *Azotobacter* 2. *Beijerinckia* 3. *Bacillus* 4. All these

1. Following are different steps involved in nodule formation in leguminous plants. Identify the correct sequence of the process

a. *Rhizobium* bacteria contact a susceptible root hair and divide near it

b. Infected thread carries the bacteria to the inner cortex

c. Upon successful infection of the root hair causes it to curl

d. Bacteria get modified into rod shaped bacterioids and cells of cortex to divide

e. Mature nodule establishes vascular connection with the host to get nutrients from it

f. Division and growth of cortical cells leads to the formation of nodules

1. a, b, c, d, e, f 2. a, c, b, d, e, f 3. a, c, b, d, f, e 4. a, b, c, e, d, f

1. An amide involved in nitrogen assimilation by plants

1. Aspargine 2. Glutamine 3. Alanine 4. Both 1 and 2

1. ------a-------NH4++NADPH-----b------Glutamate+H2O+NADP

1. a=α ketoglutaric acid, b=Nitrogenase

2. a=Succinyl CoA, b=Succinyl dehydrogenase

3. a=α ketoglutaric acid, b=Glutamate degydrogenase

4. a=Aspargine, b=Nitrogenase

1. Influx of ions leads to the

1. Entry of ions into the surrounding medium 2. Entry of ions into the cells

3. Exit of ions into the medium 4. Both 1 and 2

1. Reaction carried out by nitrogen fixing microbes include

i. 2NH3+3O2->2NO2+2H+2H2O ii. NO2-+O2->2NO3-

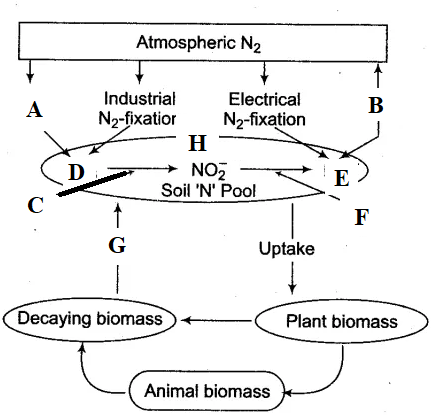
Which of the following statements about these equations are not true?

1. Step i is carried out by *Nitrosomonas* or *Nitrococcus*

2. Step ii is carried by *Nicrobacter*

3. Both steps i and ii can be called as biological nitrogen fixation

4. Bacteria carrying out these steps are usually chemoautotrophs

1. Identify the labelled parts of nitrogen cycle

1. A=Chemical nitrogen fixation; B=Denitification;

C=*Nitrosomonas*; D=Ammonia; E=Nitrate;

F=*Nitrobacter*; G=Ammonification;

H=Nitrification

2. A=Biological nitrogen fixation;

B=Denitification; C=*Nitrosomonas*;

D=Ammonia; E=Nitrate; F=*Nitrobacter*;

G=Ammonification; H-Nitrification

3. A=Biological nitrogen fixation;

B=Denitification; C=*Nitrococcus*;

D=Nitrite; E=Nitrate; F=*Nitrobacter*;

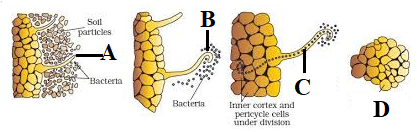
G=Ammonification; H=Nitrification

4. A=Biological nitrogen fixation; B=Nitification;

C=*Nitrosomonas*; D=Ammonia; E=Nitrate;

F=Nitrobacter; G=Ammonification; H=Denitrification

1. Labelled parts in the following are

1. A=Root hair; B=Hook; C=Infection thread;

D=Mature nodule

2. A=Stem hair; B=Hook; C=Infection thread;

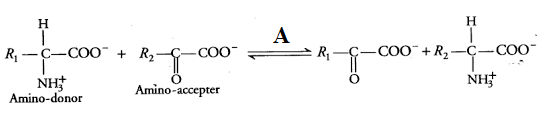
D=Immature nodule

3. A=Root hair; B=Bacteroids; C=Infection

nodule; D=Mature nodule

4. A=Root hair; B=Hook; C=Infection thread; D=Immature nodule

1. Refer the given reaction. Identify A and the reaction is \_\_\_\_\_\_\_\_\_\_\_\_\_



1. A= Nitrogenase; Oxidative amination 2. A=Transaminase; Reductive amination

3. A=Transaminase; Transamination 4. A=Leghaemoglobin; Deamination

1. Which of the following statements is/ are true?

a. Biological nitrogen fixation is generally associated with prokaryotic members like bacteria and BGA

b. Nitrification follows after nitrogen fixation which converts organic nitrogen into ammonia

c. Nitrogen is absorbed by the plants generally in the form of ammonia

d. Transamination is the process in which nitrogen compounds are produced by the transfer of amino group by reduction of ammonium ion

e. Nitrogen fixation is associated with nitrogenase enzyme which performs under anaerobic conditions

1. Only a and e 2. Only b and c 3. Only a and d 4. Only d and e

1. Nitrogen fixation in non-leguminous plants with the help of

1. *Rhizobium* 2. *Nostoc* 3. *Anabaena* 4. *Frankia*

1. Which one is the correct summary equation of nitrogen fixation

1. N2+8e-+8H++16ATP→ 2NH3+H2+16ADP+16Pi

2. N2+8e-+16ATP🡪 2NH3+H2+16ADP+Pi

3. 2NH3+2O2🡪2H++2H2O+2NO3- 4. 2NH3+3O2🡪2NO2-+2H+2N2O

1. Assertion: Plants also have hormones called phytohormones

Reason: They increase the rate of reaction and thus, always accelerate growth and other related changes

1. Both assertion and reason are true and reason is the correct explanation of assertion

2. Both assertion and reason are true and reason is not the correct explanation of assertion

3. Assertion is true statement but reason is false 4. Both assertion and reason are false

1. Senescence is an active developmental cellular process in the growth and functioning of a flowering plant, is indicated in

1. Vessels and tracheid differentiation 2. Leaf abscission

3. Annual plants 4. Floral parts

1. The hormone, which promotes flowering in long-day conditions and controls sex expression is

1. Auxins 2. Cytokinins 3. Gibberellins 4. Ethylene

1. Hormone replacing the requirement of vernalization is

1. Ethylene 2. Auxin 3. Gibberellins 4. Cytokinin

1. Gibberellins can promote seed germination because of their influence on

1. Rate of cell division 2. Production of hydrolyzing enzymes

3. Synthesis of abscisic acid 4. Absorption of water through hard seed coat

1. Which pigment involves in photoperiodic change in plants?

1. Phytochrome 2. Cytochrome 3. Chlorophyll 4. Anthocyanin

1. IAA is derived from or which of the following is involved in the synthesis of a plant hormone IAA.

1. Tryptophan 2. Tyrosine 3. Phenylalanine 4. None of these

1. The plant hormone produced by *Rhizobium* for nodulation is

1. IBA 2. NAA 3. 2,4-D 4. IAA

1. In tissue culture differentiation of root and shoot can be controlled by

1. Modifying auxin and cytokinin ratio in the medium 2. Using tissue of right size

3. Giving temperature shock 4. Change in light intensity

1. Match the following and choose the correct combination

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Column-I** |  | **Column-II** |
| A | Zeatin | 1 | Flowering hormone |
| B | Florigen | 2 | Synthetic auxin |
| C | IBA | 3 | Cytokinin |
| D | NAA | 4 | Natural auxin |

1. A-3, B-4, C-1, D-2

2. A-2, B-1, C-4, D-3

3. A-1, B-2, C-3, D-4

4. A-3, B-1, C-4, D-2

1. Pick out the correct statement

A. cytokinins especially help in delaying senescence

B. auxins are involved in regulating apical dominance

C. ethylene is especially useful in enhancing seed germination

D. gibberellins are responsible for immature falling of leaves

1. A and C 2. A and D 3. B and D 4. A and B

1. Match the following and choose the correct combination

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Column-I** |  | **Column-II** |
| A | Human urine | 1 | Cytokinin |
| B | *Gibberella fujikuroi* | 2 | Auxin |
| C | Herring fish DNA | 3 | Ethylene |
| D | Ripening fruits | 4 | Abscisic acid |
| E | Aged leaves of plants | 5 | Gibberellins |

1. A-2, B-5, C-1, D-3, E-4

2. A-2, B-4, C-5, D-3, E-1

3. A-1, B-2, C-4, D-3, E-5

4. A-5, B-4, C-1, D-3, E-2

1. Which one of the following inhibits seed germination for a particular period?

1. Light 2. Water 3. Carbon dioxide 4. Dormancy

1. Identify two physiological process induced by two different phytohormones having a common precursor, which is formed due to the catalytic activity of pyruvic dehydrogenase complex.

I. More female flowers in cucumber

II. α-amylase production in barley grains

III. Acceleration of fruit ripening in tomato

IV. Delay in sprouting of potato tubers

1. I and II 2. I and III 3. II and IV 4.III and IV

1. Etiolation of plant is caused when they

1. Are grown in dark 2. Have mineral deficiency

3. Are grown in intense light 4. Are grown in blue light

1. Negative geotropism in horizontal stems is caused by

1. Accumulation of auxins on the lower side

2. Accumulation of auxins on the upper side

3. Cell shrinkage on the lower side 4. Cell enlargement on the upper side

1. Maximum growth in plants occurs during

1. Stationary phase 2. Lag phase 3. Exponential phase 4. Senescent phase

1. A root elongating at constant rate shows

1. Geometrical growth 2. Exponential growth

3. Sigmoid growth 4. Arithmetic growth

1. Richmond-Lang effect is

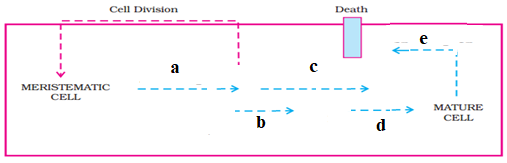
1. Morphogenesis 2. Activation of cambium

3. Apical dominance 4. Prevention of senescence

1. Plants follow different pathways in response to environment or phases of life to form different kinds of structures. This ability is called as

1. Development 2. Differentiation 3. Plasticity 4. Photoperiodism

1. Recognize the figure and find out the correct labeling



1. a- Elongation; b-Plasmatic growth; c-Differentiation; d-Senescence; e- Maturation

2. a-Plasmatic growth; b-Elongation; c-Differentiation; d-Maturation; e-Senescence

3. a-Differentiation; b-Elongation; c- Maturation; d-Senescence; e-Plasmatic growth

4. a- Plasmatic growth; b- Senescence; c- Maturation; d- Elongation; e- Differentiation

1. Which of the following is an examples of plasticity

1. Heterophylly in cotton, coriander and larkspur 2. Heterophylly in buttercup

3. Bolting in beet and cabbage 4. Both A and B

1. Which group is correct for the growth inducer hormone?

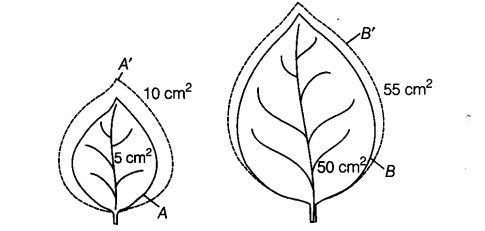
1. IAA, ABA and cytokinins 2. IAA, Gibberellin, ABA

3. IAA, Gibberellin, cytokinins 4. ABA, Ethylene

1. If cells obtain ability of cell division in certain circumstances, it is called .........

1. Differentiation 2. Cleavage 3. Dedifferentiation 4. Undifferentiation

1. The given figure shows growth of two leaves r the period of one day. If, AG = absolute growth and RGR = relative growth rate, then select the correct option



AG for leaf A RGR for leaf A AG for leaf B RGR for leaf B

1. 1% 1 2% 2

2. 100% 5 10% 5

3. 5 100% 5 10%

4. 5 100% 5 100%

1. Match the following

|  |  |  |  |
| --- | --- | --- | --- |
|  | Column I |  | Column II |
| 1 | Indole compounds | p | C2H4 |
| 2 | Adenine derivatives | q | GA3 |
| 3 | carotenoids | r | IAA |
| 4 | terpenes | s | kinetin |
| 5 | gases | t | ABA |

1. 1-r, 2q, 3-p, 4-s, 5-t

2. 1-t, 2s, 3-r, 4-q, 5-p

3. 1-p, 2s, 3-r, 4-q, 5-t

4. 1-r, 2s, 3-t, 4-q, 5-p

1. Ethylene is responsible for

1. Flowering 2. Disease in roots 3. Ripening of fruits 4. Formation of fruits

1. What is the cause of `Bakanae’ disease?

1. Fungi 2. Algae 3. Bacteria 4. Virus

1. Which of the following substance is not related with initiation of growth?

1. ABA 2. Gibberellin 3. IAA 4. Cytokinin

1. Oat - coleoptile test (coleoptile-test) is conducted for which hormone?

1. Abscisic acid (ABA) 2. Gibberellic acid (GA)

3. Indole acetic acid (IAA) 4. Indole naphthalene acetic acid (INAA)

**Topic: Transport in plants, Mineral Nutrition and Plant growth and Development**

**Unit: B-06**

**ANSWER KEY**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Q. No.** | **Ans.** | **Q. No.** | **Ans.** | **Q. No.** | **Ans.** | **Q. No.** | **Ans.** | **Q. No.** | **Ans.** |
| 1 | **2** | 2 | **1** | 3 | **4** | 4 | **4** | 5 | **4** |
| 6 | **3** | 7 | **2** | 8 | **3** | 9 | **1** | 10 | **2** |
| 11 | **3** | 12 | **2** | 13 | **2** | 14 | **1** | 15 | **3** |
| 16 | **1** | 17 | **3** | 18 | **4** | 19 | **2** | 20 | **1** |
| 21 | **4** | 22 | **2** | 23 | **4** | 24 | **3** | 25 | **4** |
| 26 | **4** | 27 | **3** | 28 | **1** | 29 | **2** | 30 | **2** |
| 31 | **1** | 32 | **4** | 33 | **2** | 34 | **2** | 35 | **4** |
| 36 | **1** | 37 | **1** | 38 | **3** | 39 | **4** | 40 | **1** |
| 41 | **1** | 42 | **4** | 43 | **4** | 44 | **1** | 45 | **3** |
| 46 | **1** | 47 | **4** | 48 | **4** | 49 | **4** | 50 | **3** |
| 51 | **4** | 52 | **3** | 53 | **2** | 54 | **3** | 55 | **2** |
| 56 | **1** | 57 | **3** | 58 | **1** | 59 | **4** | 60 | **1** |
| 61 | **1** | 62 | **2** | 63 | **3** | 64 | **3** | 62 | **2** |
| 66 | **1** | 67 | **1** | 68 | **4** | 69 | **1** | 70 | **4** |
| 71 | **4** | 72 | **1** | 73 | **4** | 74 | **4** | 75 | **1** |
| 76 | **1** | 77 | **3** | 78 | **4** | 79 | **4** | 80 | **3** |
| 81 | **2** | 82 | **4** | 83 | **3** | 84 | **3** | 85 | **3** |
| 86 | **4** | 87 | **3** | 88 | **1** | 89 | **1** | 90 | **3** |