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## Plant hormones pogil questions and answers pdf

This set of multiple-choice questions and answers from life sciences (MCQ) focuses on vegetable hormones. 1. Growth regulators, which control plant growth and development are called \_\_\_\_\_ a) Secondary metabolites b) Macro element c) Non-essential elements d) Phytohormone View Answer: d Explanation: Phytohormones or plant hormones are the small organic compound that is synthesized by specific cells/tissues at low concentration and promotes the growth and development of the plant. 2. Plant growth is mainly driven by turgor pressure. a) True b) False View Answer: a Explanation: During growth, the cells in the plant increase in volume and become highly vacuolated, this is mainly due to turgor pressure. Plant growth is defined as an irreversible increase in size or volume. 3. Which of the following is not a plant hormone? a) Corticosteroid b) Brassinosteroid c) Polyamines d) Salicylic Acid View Answer: a Explanation: Corticosteroid is an animal hormone, which is produced in the adrenal cortex of vertebrates while brassinosteroid, polyamines and salicylic acid are plant hormones. 4. Name the plant in which the auxin was first discovered? a) Mustard b) Peas c) Oats d) Rice View Answer: c Explanation: Auxin is a first plant hormone that was discovered by Frits Went in the tip of oats (*Avena sativa*) coleoptiles. 5. Which of the following is not a natural auxine? a) Acetic acid 3-acetic acid (IAA) b) 3-butyric indole acid (IBA) c) Phenyl acetic acid (PAA) d) 2,4-D View Answer: d Explanation: 2, 4-D is an organic compound and is known as synthetic auxine which is marketed as a herbicide. 6. Name the amino acid that acts as a precursor to the biosynthesis of the ins? a) Serine b) Tryptophan c) Valine d) Tyrosine View Answer: b Explanation: The basic similarity of the chemical structure between 3-acetic acid and tryptophan proves the connection between them. The conversion of tryptophan to auxine takes place by way dependent on tryptophan. 7. Mark the one that is not a physiological effect of the auxin? a) Cell elongation c) Cell differentiation d) Rooting View Answer: b Explanation: Stem elongation is the physiological effect of Gibberellins and not auxins. Auxin involves in cell elongation, rooting, and cell differentiation. 8. Name of the site of gibberellins synthesis a) Endosperm b) Coleoptile tip c) Young leaves d) Scotellum View Answer: a Explanation: Biosynthesis of Gibberellins takes place in the apical tissues and young leaves of the plant. Sometimes root tissues also produce gibberellins. 9. Gibberellin which is synthesized in the shoot transported to parts of the plant by what medium? a) Xylem b) Sieve tube c) Aleurone layer d) Phloem View Answer: d Explanation: After synthesis Gibberellins transported to the rest of the plant by phloem, but the Gibberellins that synthesize in the roots are transported to shoots by the xylem. 10. What is bolting? a) Internode elongation b) b) b) c) Shooting d) Shoot apical meristem View Answer: a Explanation: Bolting defined it as an Internode elongation phenomenon just before the plant bloomed. It is normally triggered by environmental signals. 11. Which of the following plant hormone is responsible for seed germination? a) Auxin b) Gibberellin c) Ethylene d) View Answer abscisic acid: b Explanation: Gibberellin activates the vegetative growth of the embryo by promoting the use of reserve foods that are stored in the endosperm. 12. Name the first natural cytokines. a) Neoxanthine b) Xanthoxin c) Zeatin d) Isopentenyl adenine View Answer: c Explanation: Zeatin was the first natural cytokines, which was isolated by Miller and Letham in 1955 from maize. 13. Which of the following plant hormones causes a delay in leaf senescence? a) Abscisic acid b) Ethylene c) Auxin d) Cytokines View Answer: d Explanation: Senescence is an aging process that is an energy-based genetic program. The presence of cytokines delays in leaf senescence. 14. Name the plant's stress hormone. a) Brassinosteroid b) Abscisic acid c) Cytokines d) Ethylene View Answer: b Explanation: Abscisic acid is a plant stress hormone that was first identified as a compound responsible for the abscission of cotton fruits. 15. Deficiency in which the following hormone causes dwarfism in the plant? a) Ethylene b) Abscisic acid c) Gibberellin d) Brassinosteroid View Answer: d Explanation: Brassinosteroid is chemically similar to animal hormone and are responsible for promoting cell division, cell lengthening and differentiation. Sanfoundry Global Education and Learning Series - Life Sciences. To practice all areas of life sciences, here is a complete set of more than 1000 multiple-choice questions and answers. Enter the Sanfoundry Certification Contest to obtain a free Certificate of Merit. Join our social networks below and stay up to date with the latest contests, videos, internships and jobs! Manish Bhojasia, a technology veteran with more than 20 years - Cisco Wipro, is founder and CTO in Sanfoundry. He is a Kernel Developer Linux - SAN Architect and is passionate about developing skills in these areas. He lives in Bangalore and offers targeted training sessions to IT professionals in Linux Kernel, Linux Debugging, Linux Device Drivers, Linux Networking, Linux Storage, Advanced C Programming, SAN Storage Technologies, SCSI Internals and Storage Protocols such as iSCSI and Fiber Channel. Stay in touch with it - LinkedIn Plant Hormones or Phytohormones are the unique molecules synthesized in plants occurring in extremely low concentrations. Some important plant hormones are Auxin, Gibberellin, Abscisic acid and Cytokinin 1. Indole-3-acetic acid is the most common natural plant hormone in the class - a) Gibberellin (b) Auxin (c) Ethylene (d) Cytokinin Answer: b) 2. This hormone is not a growth inhibitor a) Dormin b) Abscisic acid (c) (c) d) IAA Answer: d) 3. Is a gaseous plant hormone a) IBA b) Ethylene (c) Abscisic Acid (d) NAA Response: b) 4. A widely used rooting hormone is (a) 2,4, -D (b) NAA (c) 2,4,5 - T (d) Cytokinin Response: (b) 5. The leaf defoliator used during the Vietnam War by the United States known as Agent Orange was (a) 2,4, -D and 2,4,5 - T (b) Ethylene (c) 2,4, -D and NAA (d) 2,4,5 - T, ethylene and NAA Response: (a) 6. The transport of the auxin is a) non-polar b) symplastic c) apoplast d) polar Response: d) 7. Nodule formation is induced by a) IAA b) NAA c) IBA d) A) and c) Response: a) 8. It is the precursor of indole-3-acetic acid (a) Methionine b) Tryptophan (c) Glycine (d) Isovaleryl pyrophosphate Response: (b) 9. This biotest is used to detect the presence of auxin (a) Only tobacco marrow culture (b) Tobacco marrow culture and Avena curvature test (c) Tobacco marrow culture and split pea stem curvature test (d) Broken pea stem curvature test and Avena's curvature test Answer: (d) 10. Which of them is not a function of the auxin? a) induce callus b) inducing dormancy c) improving cell division (d) maintaining apical dominance Response: b) Hormones are produced naturally by plants, while plant growth regulators are applied to plants by humans. Plant hormones and growth regulators are chemicals that affect flowering, aging, root growth, distortion and killing of organs. Prevention or promotion of stem elongation, improved fruit colour, preventing leaves, falling leaves or both. Many other conditions. Very low concentrations of these substances produce major growth changes. Compound Effect/Use Of gibberellin acid (GA) stimulates cell division and elongation, breaks dormancy, accelerates the germination of ethylene gas (CH<sub>2</sub>) Maturation agent; stimulates leaf and fruit abscission Indoleacetic acid (IAA) stimulates apical dominance, rooting and abscission of indolebutyric acid (IBA) leaves stimulates root growth Naphthalene acetic acid (NAA) stimulates root growth, slows breathing (used as a holly dip) Growth retardants (Atr, B-9, Cycocel, Arest) Prevent stem elongation in certain crops (e.g., chrysanthemums, poinsettias and lilies) Herbicides (2,4-D, etc.) False plant growth; Selective and non-selective materials used to kill unwanted plants Plant growth regulators may be synthetic compounds, such as IBA and Cycocel, that mimic natural plant hormones, or they may be natural hormones that have been plant tissues, such as IAA. These growth-regulating substances are most often applied as spraying on the foliage or as a liquid pout in the soil around the base of a plant. Applied concentrations of these substances are generally measured in parts per million (ppm) and in some cases parts per billion (ppb). These growth-regulating substances are most often applied as spraying on the foliage or as a liquid pout in the soil around the base of a plant. In general, their effects are short-lived, and they may need to be reapplied in order to achieve the desired effect. There are five groups of plant growth-regulating compounds: auxin, gibberellin (GA), cytokinin, ethylene and abscisic acid (ABA). For the most part, each group contains both natural hormones and synthetic substances. Auxin Auxin provokes several responses in plants: leaning towards a light source (phototropism), growth of descending roots in response to gravity (geotropism), promoting apical dominance (the tendency of an apical bud to produce hormones that suppress the growth of buds below on the stem), flower formation, fruit set and growth. Formation of adventitious roots. Auxin is the active ingredient in most rooting compounds in which cuttings are soaked during vegetative propagation. Gibberellins Gibberellins stimulate cell division and elongation, break the dormancy of seeds, and germinate speed. The seeds of some species are difficult to germinate; you can dip them into a GA solution to get them started. Cytokinins Unlike other hormones, cytokinins are found in both plants and animals. They stimulate cell division and are often included in sterile environments used to grow plants from tissue culture. If the mixture of a growth-regulating compound medium is high in cytokinins and low in auxin, tissue culture explant (small plant part) will produce many shoots. On the other hand, if the mixture has a high ratio of auxin to cytokinin, the explant will produce more roots. Cytokinins are also used to delay aging and death (senescence). Ethylene is unique in that it is only found in the gaseous form. It induces maturation, causes leaves to sag (epicasty) and fall (abscission), and promotes senescence. Plants often increase the production of ethylene in response to stress, and ethylene is often found in high concentrations in cells at the end of a plant's life. The increase in ethylene in leaf tissue in the fall is part of the reason why leaves fall from trees. Ethylene is also used to ripen fruit (e.g., green bananas). Abscisic Acid Abscisic acid (ABA) is a general inhibitor of plant growth. It induces dormancy and prevents seeds from germinating; causes the abscission of leaves, fruits and flowers; and causes the stomata to close. High concentrations of ABA in guard cells during periods of drought stress probably play a role in stomatal closure. Previously titled Plant Hormones and Growth Regulators Do You Want to Know More About This Topic? Explore more resources OSU: Gardening Techniques Information on garden planning, maintenance, cleaning, pest control, indoor plants and indoor gardening for the month of November. May 2018 Article It's a myth that lawns and gardens in sandy soil need more water than other soils June 15, 2012 News Launched in 2017, it is the first laboratory in the United States entirely focused on socio-ecological research in family and community gardens. Gail Langellotto October 2020 OSU Impact History Extension Master Gardeners are participating in a community science project to understand the dynamics of human soil microbes in gardening. 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