Q-1 - 10761362

It takes very long time for pineapple plants to produce flowers.

Which combination of hormones can be applied to artificially

induce flowering in pineapple plants throughout the year to increase

yield?

(A) Cytokinin and Abscisic acid

(B) Auxin and Ethylene

(C) Gibberellin and Cytokinin

(D) Gibberellin and Abscisic acid

CORRECT ANSWER: B

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Q-2 - 34100369

The Avena curvature is used for bioassay of

(A) GA_3

(B) IAA

(C) Ethylene

(D) ABA

CORRECT ANSWER: B

SOLUTION:

Bioassay is a quantitative and qualitative test used to determine the nature and function of a biochemical by using living material, e.g. Avena curvature test is used as bioassay usually for auxins (Indole Acetic Acid).

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Q-3 - 34100418

Which combination of gases is suitable for fruit ripending

(A) 80% CO_2 and 20% CH_2

(B) 80%CH_4 and 20%CO_2

(C) 80% CO_2 and 20% O_2

(D) 80% $C_2H_4$and 20% CO_2

CORRECT ANSWER: D

SOLUTION:

Ethylene is a gaseous hormone which promotes ripening of fruits. Methionine amino acid is precursor molecule for ethylene synthesis. Ethylene synthesis takes place in all parts of a plant such as roots, stems, leaves, fruits,

seeds, etc.

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Q-4 - 34100397

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

(A) vernalisation

(B) chelation

(C) stratification

(D) scarification

CORRECT ANSWER: C

SOLUTION:

Stratification involves the treatment of seed at low

temperature $\left(5-10^{C}\right)$ under sufficiently moist conditions to break its dormancy and to mduce germination

Scarification involves any damage or breakage of seed coat by physical methods, (e.g. use of scalpel, wooden hammer, etc.) or chemical methods (use of mild acids) to break seed dormancy

Vernalisation and Chelation are the chin treatment of plant in its early stages of life history to stimulate or induce early flowering.

Q-5 - 34100433

Clinostat is employed in the study of

(A) osmosis

(B) growth movements

(C) photosynthesis

(D) respiration

CORRECT ANSWER: B

SOLUTION:

Clinostat/klinostat is an instrument which can nullify the effect of gravity and allow a plant to grow horizontaliy by slowly rotatmg it. Rotating clinostat do not show any bending because the gravitation stimulus in th.is case is not unilateral as it affects all the sides of the rotating organs equally, whereas plant kept in unrotated/fixed clinostat bends downwards showing positiwi geotropism

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Q-6 - 55655993

When growth is going on at a slow rate, this phase is known as

(A) lag period

(B) log period

(C) period of diminishing growth

(D) exponential phase

CORRECT ANSWER: A

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Q-7 - 55655995

Maximum rate of growth is achieved during

(A) lag period

(B) log period

(C) steady state

(D) senescent phase

CORRECT ANSWER: B

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Q-8 - 55655996

Cell differentiation is accompanied during period of

(A) lag phase

(B) log phase

(C) drminishing growth

(D) senescence

CORRECT ANSWER: C

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Q-9 - 34100376

Which one o f the following plant hormone (phytomone) Is know as a stress hormone

(A) abscsic acid

(B) Ethylene

(C) GA_3

(D) Indole acetic acid

CORRECT ANSWER: A

SOLUTION:

Abscisic Acid (ABA) is also known as 'strees hormone ' or dormin because it is produced in much higher amounts, when plants am subjected to various kinds of stresses .It often gives plant organs a signal that they are undergoing physiological stresses such as lack of water, saline soil, cold temperature, and frost. ABA often

cause responses that help plants and protect against these stresses.

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Q-10 - 23762463

Etiolation is characterised by

(A) Slender yellowish stems

(B) Small yellowish leaves

(C) Subterminal hook

(D) All the above.

CORRECT ANSWER: D

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Q-11 - 55656053

Closure of stomata' is brought about by

(A) Abscisic acid

(B) Kinetin

(C) Giberellin acid

(D) IBA

CORRECT ANSWER: A

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Q-12 - 34100421

The pigment which mainly absorbs red and far-red radiation in plants, is known as

(A) xanthophyll

(B) cytochrome

(C) phytochrome

(D) carotene

CORRECT ANSWER: C

SOLUTION:

Phytochrome is a type of pigment which absorbs red or far-red light and its absorbing region is closely associated with protein. The phytochrome pigment is found to be present m two photoreversible forms

$P_r(P_{660}$ and $P_{tr}(P_{730})$

$$P_r \underset{Farred}{\overset{\text{Red light}}{\Longleftrightarrow}} P_{fr}$$
$$(\text{inative}) \qquad\qquad (\text{active})$$

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Q-13 - 23762467

High C/N ratio produces

(A) Softer tissues

(B) More mechanical tissues

(C) More growth hormones

(D) Growth inhibitors.

CORRECT ANSWER: B

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Q-14 - 34100388

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

(A) Indole-butyric acid

(B) Indole-3-acetic acid

(C) Gibberellic acid

(D) Abscisis acid

CORRECT ANSWER: D

SOLUTION:

Abscisic acid is a terpenoid, which is a derivative of steroids (carotenoid). lHJole butyric acid and indole-3-acetic acid are au.xins which are weak organic acids. Gibberellin acid (gibberellin) is a terpene.

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Q-15 - 23762486

Scientist who first isolated cytokinin was

(A) White

(B) Skoog

(C) Letham

(D) Miller.

CORRECT ANSWER: D

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Q-16 - 55656019

What is not true about auxin ?

(A) It is derived from mevalonic acid

(B) It promotes cell division

(C) It promotes stem elongation

(D) It inhibits lateral growth

CORRECT ANSWER: A

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Q-17 - 23762470

Crescograph was prepared by

(A) Bose

(B) Pfeffer

(C) Ganong

(D) Dixon.

CORRECT ANSWER: A

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Q-18 - 34100390

Impotance of day length (photoperiodism) in flowering of plants was first shown in

(A) Lemna

(B) tobacco

(C) cotton

(D) Petunia

CORRECT ANSWER: B

SOLUTION:

Photoperiodism was first discovered by Garner and Allard (1920, 1922). They observed that malyland mammoth variety of tobacco could be made to flower only by reducing the light hours with artificial darkning. On the basis of photoperiodic response to flowering plants have been divided into short day plants (tobacco), long day plant (e.g. wheat, hanbane), short long day plants. (e.g. Campanula), long short day plants (e.g. Bryophyllum) intermediate plants (e.g. wild kidney bean) and day neutral plants (e.g cotton)

Q-19 - 55656071

Bakanae disease in Japan was due to a fun- gus known as

(A) Gibberella fujikori

(B) Aspergillus flavus

(C) Both (1) and (2)

(D) Plasmopara viticola

CORRECT ANSWER: A

Q-20 - 23762504

Differentiation of callus requires a specific ratio of two hormones

(A) Auxin and gibberellin

(B) Auxin and abscisic acid

(C) Gibberellin and abscisic acid

(D) IAA and cytokinin.

CORRECT ANSWER: D

Q-21 - 34100416

Geocarpic fruits are produced by

(A) onion

(B) watemelon

(C) ground nut

(D) carrot

CORRECT ANSWER: C

SOLUTION:

Geocarpy refers to the ripening of fruits underground. In the case of ground nut, the young fruits are pushed into the soil as a result of post-fertilisation curvature of the stalk

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Q-22 - 23762552

Germination of some seeds is promoted by

(A) Green light

(B) Red light

(C) Far-red light

(D) Blue light.

CORRECT ANSWER: B

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Q-23 - 55655998

When the rate of maximum growth is maintained for sometime, it is known as

(A) J-shaped phase of growth

(B) Linear phase of growth

(C) S-shaped phase of growth

(D) All the above

CORRECT ANSWER: B

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Q-24 - 34100460

Which of the following harmones can replace vernalization

or

Genetic dwarfness can be overcome by treating with

(A) Auxin

(B) Cytokinin

(C) Gibberellins

(D) Ethylene

CORRECT ANSWER: C

SOLUTION:

Vemalisation refers to the application of low temperature to moistened seeds and young plants, causing shortening of vegetative phase and initation of reproductive phase.

Chailakhyan (1968) reported that under long-day conditions vernalin hormone turn into gibberellin and

thus, in some plants, the requirement for vernalisation is overcome by gibberellins

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Q-25 - 55656021

The universal natural auxin of plants is

(A) IBA

(B) IAA

(C) NAA

(D) Citric auxin

CORRECT ANSWER: B

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Q-26 - 23762575

Turgor movements are due to

(A) Reversible changes in cell volume due to changes in turgidity of cell.

(B) Reversible changes in cell volume due to simple cell contraction in cell.

(C) Irreversible changes in cell volume due to maintenance of turgidity of cell

(D) Irreversible changes in cell volume due to cell elongation.

CORRECT ANSWER: A

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Q-27 - 34100391

Opening of floral buds is

(A) autonomic movement of locomotion

(B) autonomic movement of variation

(C) paratonic movement of growth

(D) autonomic movement of growth

CORRECT ANSWER: D

SOLUTION:

Opening of floral buds into flower is a type of autonomic movement of growth (nastic movement). This is non-directional movement in which the response is determined by the structure of the responsive organ and not to the direction of stimulus. Greater growth one side causes the organ to bend to the opposite side.

Q-28 - 23762571

Who discovered that phototropism is the result of presence of more auxin on shaded side than on illuminated side.

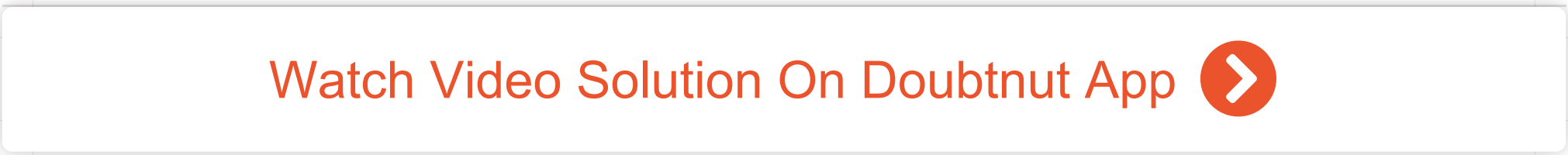
(A) Galston

(B) Boysen-Jensen

(C) Went

(D) Kogl and Haagen-Smit.

CORRECT ANSWER: C



Q-29 - 55656048

Name the hormone which stimulates trans- verse or isodiametric growth

(A) ethylene

(B) GA

(C) sodium salt of NAA

(D) methionine

CORRECT ANSWER: A

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Q-30 - 55656049

Major precursor of ethylene production in plants is

(A) lysine

(B) methionine

(C) alanine

(D) valine

CORRECT ANSWER: B

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Q-31 - 23762449

The terms "vernalisation" was coined by

(A) Garner and Allard

(B) Darwin

(C) Geoffery

(D) Lysenko.

CORRECT ANSWER: D

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Q-32 - 23762456

The day neutral plant is

(A) Tobacco

(B) Tomato

(C) Wheat

(D) Oat.

CORRECT ANSWER: B

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Q-33 - 55656009

The process when the embryo of the seed continues growth while the latter is attached to the parent plant is known as

(A) epigeal germination

(B) hypogeal germination

(C) vivipary

(D) vernalisation

CORRECT ANSWER: C

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Q-34 - 34100384

Coiling of graden pea tendrils around any support is an example of

(A) thigmotaxis

(B) thigmonasty

(C) thigmotropism

(D) thermotaxis

CORRECT ANSWER: C

SOLUTION:

Thigmotropism movements are due to the contact with a

foreign body. In twiners and lianas, there is less growth on the idea of col).tact and more growth on the side of branch away from the contact Coiling of garden pea tendrils around any support is an example of thigmotropism.

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Q-35 - 34100400

Anthesis is a phenomenon which refers to:

(A) reception of pollen by stigma

(B) formation of pollen

(C) development of anther

(D) opening of flower bud

CORRECT ANSWER: D

SOLUTION:

Anthesis is the opening of floral buds. Reception of pollen by stigma is called pollination. Formation of pollen is called microsporogenesis

Q-36 - 23762505

Ferulic acid, coumarin and hesperidin are

(A) Secondary plant products

(B) Hormones

(C) Enzymes

(D) Vitamins.

CORRECT ANSWER: A

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Q-37 - 23762549

Weed killers have properties similar to

(A) Hormones

(B) Enzymes

(C) Insecticides

(D) Vitamins.

CORRECT ANSWER: A

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Q-38 - 55656057

Banana is natural parthenocarpic fruit due to

(A) Triploid nature

(B) vegetative propagation

(C) high level of auxins in ovary

(D) treatment with certain phytohormones

CORRECT ANSWER: C

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Q-39 - 23762530

Cell mitosis is induced by

(A) Colchicine

(B) Gibberellic acid

(C) Nitrosoguanidine

(D) Kinetin.

CORRECT ANSWER: D

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Q-40 - 34100393

The hormone which was discovered through ' foolish seedling ' disease of rice is

Or

Bakane disease in paddy is caused by

(A) GA

(B) ABA

(C) 2,4 D

(D) IAA

CORRECT ANSWER: A

SOLUTION:

Gibberellins (GA) were first observed from the fungus Gibberella fujikuroi, the causal organism of foolish seedling disease of rice plants in Japan by Kurasawa in 1926.

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Q-41 - 23762451

Gibberellins were first extracted from

(A) Coleoptile tip

(B) Root tip

(C) Fungus

(D) Bacterium.

CORRECT ANSWER: C

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Q-42 - 55656045

The phenomenon of delay of senescence by cytokinins is known as

(A) Richmond Lang effect

(B) Bohr effect

(C) Kutusky effect

(D) Emerson effect

CORRECT ANSWER: A

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Q-43 - 23762500

The term 'Yarovization' was coined by

(A) Lysenko

(B) Klebs

(C) Yabuta

(D) Kogl and Haagen-Smit.

CORRECT ANSWER: A

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Q-44 - 23762567

Exactly opposite response of stem and root to gravity is because of

(A) Requirement of differential optimum concentration of auxin for elongation of stem and root cells

(B) Nature of these organs

(C) Position effect of these organs since embryonic stage in seed

(D) None of the above.

CORRECT ANSWER: A

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Q-45 - 34100441

Bananas can be prevented from overripening by

(A) mainiaining them aL ream iemperature

(B) refrigeration

(C) dipping in ascorbic acid solution

(D) storing in a freezer

CORRECT ANSWER: C

SOLUTION:

Ascorbic acid (vitamin-C) prevents over ripening of

banana and other fruits because it is an antioxidant

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Q-46 - 34100392

The wavelength of light absorbed by Pr form of phytochrome is

(A) 640 nm

(B) 680 nm

(C) 720 nm

(D) 620 nm

CORRECT ANSWER: B

SOLUTION:

When P_r absorbs red light (650-670 nm) it is converted into *[Math Processing Error]* form and when *[Math Processing Error]* absorbs far red light (730-735 nm) it is converted back into p_r form

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Q-47 - 55656002

The seeds which are affected by the presence of light at the time of germination are known as

(A) non photoblastic

(B) photoblastic

(C) light hard seeds

(D) positively photoblastic

CORRECT ANSWER: B

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Q-48 - 34100417

The closing and opening of the leaves of Mimosa pudica is due to

(A) thermonastic movement

(B) hydrotropic movement

(C) seismonastic movement

(D) chemonastic movement

CORRECT ANSWER: C

SOLUTION:

Seismonastic movements are nastic movements of turgor in response to stimulus of shock (like touch/mechanical/ electrical/thermal/ chemical shock). On touching Mimosa pudica, its leaves droop down and the stimulus travels at the speed of 1 cm/sec

Removal of apical bud results in

(A) formation of new apical bud

(B) elongation of main stem

(C) death of plant

(D) formation of lateral branching

CORRECT ANSWER: D

SOLUTION:

Apical dominance is the phenomenon in which the presence of apical bud does not allow the nearby lateral buds to grow. When the apical bud is removed the lateral buds sprout

Apical dominance is

(A) suppresion of growth of apical bud by nearby lateral axillary buds

(B) stimulation of growth of apical bud by removal of nearby axillary buds

(C) suppression of growth of lateral axillary buds by removal of apical bud

(D) suppression of growth of nearby lateral axillary buds by apical bud

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CORRECT ANSWER: D

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Q-51 - 55656031

IAA was first isolated from

(A) Corn germ oil

(B) Gibberella

(C) Human urine

(D) Rhizopus

CORRECT ANSWER: C

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Q-52 - 55656041

The first cytokinin was isolated by

(A) Darwin

(B) Evins

(C) Miller and Skoog

(D) Leopoid

CORRECT ANSWER: C

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Q-53 - 55656042

The first natural cytokinin of plants is

(A) zeatin

(B) kinetin

(C) dihydrooxyzeatin

(D) riboxylzeatin

CORRECT ANSWER: A

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Q-54 - 26762558

20. A train 150 m long passes a tree in 12 seconds. How long will it

take to pass a tunnel 250 m long?Multiple Choice Questions (MCO)

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Q-55 - 55656037

Dwarfness can be controlled by treating the plant with

(A) cytokinin

(B) gibberellic acid

(C) auxin

(D) antigibberellin

CORRECT ANSWER: B

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Q-56 - 34100464

Leaves of many grasses are capable of folding and unfolding because they

(A) are very thin

(B) are isobilateral

(C) have specialised bulliform cells

(D) have parallel vascular bundles

CORRECT ANSWER: C

SOLUTION:

Leaves of monocuts are chaiacterised as isobilateral (equally green on both the surtaces), amphistomatic (stomata on both surface), dumb bell-shaped guard cells The upper epidermis possesses groups of larger sized thin walled vacuolate cells called bulliform or motor cells. Bulliform cells help in rolling of leaves during water

stress or drought.

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Q-57 - 55656072

From which was zeatin isolated ?

(A) Coconut milk

(B) Pineapple

(C) Soyabean

(D) Groundnut

CORRECT ANSWER: A

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Q-58 - 23762446

The rosette habit of cabbage can be changed by applicaton of

(A) GA

(B) IAA

(C) ABA

(D) CK.

CORRECT ANSWER: A

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Q-59 - 55655997

The period of steady state is never reached in the organs of

(A) determinate structures

(B) indeterminate structure

(C) leaves

(D) all the above

CORRECT ANSWER: B

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