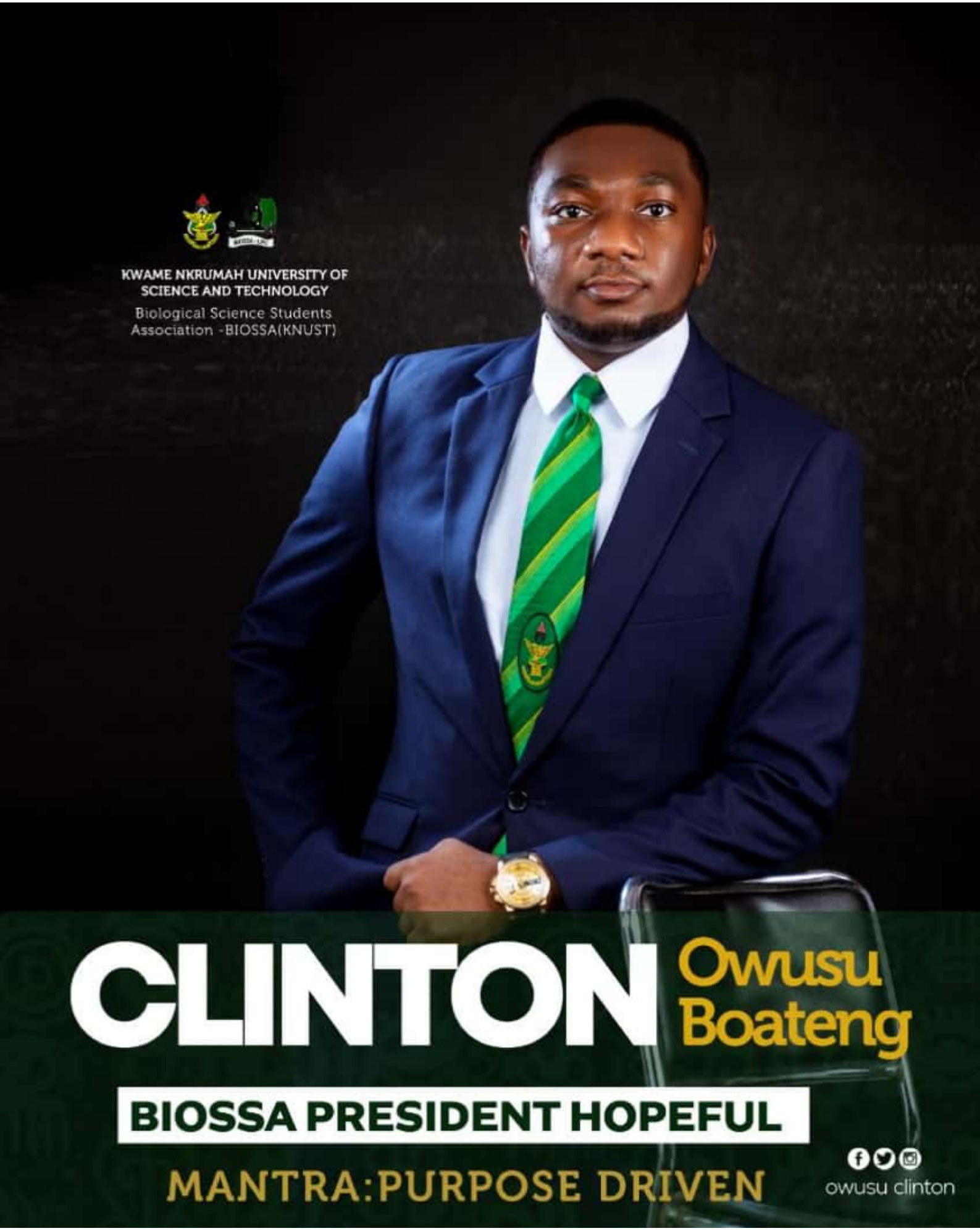

MCQ on Plant Hormones - Auxins

1. The term auxin was coined by

a) Skoog

b) Haberlandt

c) Miescher

d) F.W. Went

2. Precursor of Indole acetic acid (natural auxin) is

a) Glycine

b) Methionine

c) Isopentynyl pyrophosphate

d) Tryptophan

3. All the following hormones are growth inhibitors except

a) Absiccic acid

b) dormin

c) ethylene

d) IAA

4. Which of the following is a gaseous hormone

a) IBA

b) NAA

c) Abscicic acid

d) Ethylene

5. Which of the following is widely used as a rooting hormone

Auxins

a) NAA

b) 2,4, D

c) 2,4,5-T

d) cytokinnin

6. "Agent orange" the leaf defoliator used by USA in Vietnam war was

a) ethylene

b) 2,4,-D and 2,4,5-T

c) 2,4,-D and NAA

d) 2,4,5-T, NAA and ethylene

7. All the following inhibits auxin transport (anti-auxins) except

a) Cytokinnin

b) α naphthyl thalamic acid

c) 2,3,5-tri iodo benzoic acid

d) ethylene

8. Which of the following auxin is widely used as a selective weedicide

a) IBA

b) 2,4,-D

c) NAA

d) 2,4,5-T

9. All are synthetic auxins except

a) NAA

b) IAA

c) 2,4,-D

d) 2,4,5-T

10. Auxin transport is

a) polar

b) non-polar

c) symplast

d) apoplast

11. Which of the following bioassays are used to detect the presence of auxin

a) Avena curvature test and tobacco pith culture

b) Split pea stem curvature test and tobacco pith culture

c) Avena curvature test and Split pea stem curvature test

d) tobacco pith culture only

12. Which of the following is not a function of auxin

a) inducing dormancy

b) enhancing cell division

c) inducing callus formation

d) maintaining apical dominance

13. Nodule formation is induced by

a) IBA

b) IAA

c) Both (a) and (b)

d) NAA

14. All are natural auxins except

a) IAA

b) Phenoxy acetic acid

c) Indole-3-acetic acid

d) NAA

15. Which of the following is an auxin receptor

a) ETR1

b) CBP1

c) ABP1

d) GRE

Abbreviations used:

* ABP: auxin binding protein 1

* GRE: giberillin responsive element

* NAA: naphthalene acetic acid

* IAA: indole acetic aicd

* TIBA: tri iodo benzoic acid

* 2,4,-D: 2,4-dichloro phenoxy acetic acid

Answers:

1-d

2-d

3-d

4-d

5-a

6-b

7-a

8-b

9-b

10-a

11-c

12-a

13-b

14-d

15-c

MCQ on Dormancy and Seed germination

1. Dormancy is the

a) failure of a seed to germinate under favourable condition

b) failure of a seed to germinate under unfavourable condition

c) the ability of a seed to germinate under favourable condition

d) the ability of a seed to germinate under unfavourable condition

MCQ on Dormancy and Seed germination

2. Which of the following statement is true regarding dormancy?

a) Dormancy may be due to seed coats impermeability to CO2

b) Dormancy helps the seed to overcome unfavourable condition

c) Dormancy helps the seed to germinate during unfavourable condition

d) Dormancy may be due to soft fragile seed coat

3. Which of the following is a natural germination inhibitor that induces dormancy?

a) auxin

b) cytokinin

c) ABA

d) gibberellin

4. Some seeds enter dormancy when exposed to unfavourable condition for some time. Such dormancy is called

a) immediate dormancy

b) primary dormancy

c) secondary dormancy

d) short term dormancy

5. Which of the following plant exhibit dormancy due to immature embryo?

a) Xanthium

b) Orchids

c) Hibiscus

d) Solanum

6. The process of weakening the seed coat to break dormancy is called

a) vernalization

b) scarification

c) photoperiodism

d) stratification

7. Photoblastic seeds are seeds

a) affected by light for germination

b) not affected by light for germination

c) independent of light for germination

d) affected by light and temperature for germination

8. Which is the pigment is involved in the germination of photoblastic seeds?

a) chlorophyll

b) carotenes

c) phytochromes

d) phaeophytin

9. Which of the following hormone is a dormancy inducer?

a) 2-4D

b) GA4

c) ABA

d) GA3

10. Which of the following is the structure in the seed coat that prevents water and O2 entry into seed thereby inducing dormancy?

a) strophiolar plug

b) pericarp

c) exocarp

d) epicarp

Learn more: MCQ on Plant physiology

Answers:

1. b) failure of a seed to germinate under unfavourable condition

2. b) Dormancy helps the seed to overcome unfavourable condition

3. c) ABA

4. c) secondary dormancy

5. b) Orchids

6. b) scarification

7.a) affected by light for germination

8. c) phytochromes

9. c) ABA

10. a) strophiolar plug

MCQ on Plant hormones - Cytokinins

1. Cytokinins are

a) adenine derivatives

b) guanine derivatives

c) cytidine derivatives

d) thymine derivatives

2. Which of the following is a natural cytokinin

a) isopentanyl adenine

b) zeatin

c) 6-isopentanyl aenine

d) 6-amino purine

3. The first kinetin isolated by Miller was from

a) coconut endosperm

b) maize grains

c) herring sperm DNA

d) wheat grains

4. The first natural cytokinin isolated from liquid endosperm was

a) isopentanyl adenine

b) zeatin

c) 6-isopentanyl aenine

d) 6-amino purine

5. Agrobacterium tumefaciens Ti plasmids t-DNA has genes for

a) Auxin and giberrellins

b) cytokinins and ethylene

c) cytokinins and giberrellins

d) Auxin and cytokinins

6. Which of the following is the precursor of cytokinins

a) adenine

b) guanine

c) cytidine

d) thymine

7. Cytokinins are predominantly present in

a) permanent tissues

b) meristamatic tissues

c) endodermis

d) cortical region

8. All are bioassays for cytokinins except

a) chlorophyll preservation test

b) tobacco pith culture

c) rice seedling growth inhibition test

d) excised radish cotyledon enlargement test

9. All the statement are true regarding cytokinin except

a) promote cell division

b) delay senescence

c) induce dormancy

d) counteract apical dominance

10. Cytokinin treatment enhances

a) chlorophyll synthesis

b) chlorophyll degradation

c) protein degradation

d) water uptake

11. In tissue culture, high cytokinins to auxin ratio causes

Cytokinin: Auxin ratio

Cytokinin: Auxin ratio

a) root differentiation

b) shoot differentiation

c) both a and b

d) none of these

12. In tissue culture, low cytokinins to auxin ratio causes

a) root differentiation

b) shoot differentiation

c) both a and b

d) none of these

13. Translocation of cytokinin is polar and takes place through

a) xylem

b) phloem

c) both phloem and xylem

d) capillary rise

14. 'Pomalin' is effective in increasing apple size and is a combination of

a) Auxin and giberrellins

b) cytokinins and ethylene

c) cytokinins and giberrellins

d) Auxin and cytokinins

15. Which of the following hormone is involved in counteracting apical dominance induced by auxin

a) cytokinin

b) ethylene

c) abscisic acid

d) brassinosteroids

Answers

1-a

2-b

3-c

4-b

5-d

6-a

7-b

8-c

9-c

10-a

11-b

12-a

13-a

14-c

15-a

MCQ on Plant Hormones - Gibberellins

1. Gibberellins was named after a fungus called

a) Gibberella fujikuroi

b) Gibberella gaditijirrii

c) Gibberella acuminata

d) Gibberella africana

2. Gibberellins are chemically

a) phenolic derivatives

b) terpenoid derivatives

c) adenine derivatives

d) alkaloid derivatives

3. Gibberella fujikuroi the fungus causes

a) foolish seedling disease of rice or bakanae disease

b) damping off seedling disease of rice or bakanae disease

c) fungal blight disease of rice or bakanae disease

d) rust disease of rice or bakanae disease

4. The most studied gibberellin is

a) GA1

b) GA9

c) GA3

d) GA4

5. All are anti giberrellins except

a) acetosyringone

b) Amo1618

c) maleic hydrazide

d) phosphon D

6. All are functions of gibberellins except

a) promote cell elongation

b) promote dormancy

c) promote elongation of internodes

d) promotes parthenocarpic fruit fromation

7. Which of the following bioassay is used to test the presence of giberrillins

a) chlorophyll preservation test

b) dwarf pea elongation technique

c) rice seedling growth inhibition test

d) excised radish cotyledon enlargement test

8. The gibberilins present in the aleurone layer of barley increase transcription of

a) lipase and protease

b) protease and cellulase

c) protease and amylase

d) lipase and cellulase

9. Elongation of rosette plants is achieved by treatment with

Elongation of rosette plants

a) auxin

b) zeatin

c) cytokinin

d) gibberrellin

10. Translocation of gibberrelins is non-polar and predominantly takes place through

a) xylem

b) phloem

c) both phloem and xylem

d) capillary rise

11. The hormone which is involved in regulation of florigen synthesis

a) ethylene

b) zeatin

c) cytokinin

d) gibberellin

12. Which is the giberrellin involved in elongation responses

a) GA1

b) GA9

c) GA3

d) GA4

13. Which is the giberrellin involved in flowering

a) GA1

b) GA9

c) GA3

d) GA4

14. Early stages of gibberellin synthesis take place in

a) mitochondria

b) peroxisome

c) plastids

d) cytoplasm

15. Genetic dwarfism can be nullified by spraying with

a) auxin

b) zeatin

c) cytokinin

d) gibberrellin

Answers:

1-a

2-b

3-a

4-c

5-a

6-b

7-b

8-c

9-d

10-b

11-d

12-a

13-b

14-c

15-d

MCQ on Plant Hormones -Abscisic acid (ABA)

Abscisic acid (ABA)

1. Which of the following hormone is a growth inhibitor

a) IAA

b) 2ip

c) GA3

d) dormin

2. Abscisic acid is also called as

a) abscisin I

b) abscisin II

c) dormin

d) all of the above

3. ABA regulates

a) flowering

b) dormancy

c) ripening

d) etiolation

4. The active form of ABA is

a) (+) cis ABA

b) (+) 2-trans ABA

c) (+) cis 2 trans ABA

d) (+) trans ABA

5. The precusrsor of ABA is

a) violaxanthin

b) methionine

c) tryptophan

d) carotenoids

6. Which of the following is a bioassay for ABA

a) chlorophyll preservation test

b) triple pea test

c) rice seedling growth inhibition test

d) excised radish cotyledon enlargement test

7. All the following are functions of ABA except

a) induce dormancy

b) enhances abscission

c) involved in stress response

d) cell elongation

8. ABA stimulates release of

a) auxin

b) ethylene

c) cytokinin

d) GA

9. During water stress rise in ABA levels initially cause

a) stomatal opening

b) stomatal closure

c) reduced transpiration

d) increased transpiration

10. Transport of ABA takes place through

a) xylem

b) phloem

c) endodermis

d)both a and b

11. ABA is an

a) antiauxin

b) anticytokinin

c) antigibberelin

d) ethylene inhibitor

12. Which of the following hormone functions as an anti-transpirant

a) auxin

b) cytokinin

c) ABA

d) ethylene

13. ABA is also called as

a) stress hormone

b) ripening hormone

c) growth hormone

d) none of these

14. High levels of ABA are synthesized in

a) tissues undergoing cell division

b) tissues undergoing cell elongation

c) tissues undergoing stress

d) tissues undergoing ripening

15. ABA synthesis begins in

a) cytoplasm and chloroplast

b) chloroplast and amyloplast

c) cytoplasm and amyloplast

d) chloroplast and amyloplast

Answers :

1-d

2-d

3-b

4-a

5-a

6-c

7-d

8-b

9-b

10-d

11-c

12-c

13-c

14-c

15-d

MCQ on Plant Hormones - Ethylene

Ripening Hormone

1. Which of the following is a naturally occurring gaseous hormone

a) IAA

b) zeatin

c) 2iP

d) ethylene

2. High concentration of ethylene is present in

a) young leaves

b) meristamatic regions

c) buds

d) ripening fruits

3. The precursor of ethylene is

a) tryptophan

b) serine

c) methionine

d) cysteine

4. All the following are functions of ethylene except

a) promote senescence

b) enhances abscission

c) promote ripening

d) induces cell division

5. All are ethylene inhibitors except

a) phenyl mercuric acetate

b) Ag+

c) amionooxy acetic acid

d) aminoethoxy vinyl glycine

6. Which of the following ion is an ethylene inhibitor

a) Mg2+

b) NH3+

c) Ag+

d) Cl-

7. Which of the following is a bioassay for ethylene

a) chlorophyll preservation test

b) triple pea test

c) rice seedling growth inhibition test

d) excised radish cotyledon enlargement test

8. Climacteric fruits are

a) fruits exhibiting increase in respiration before final stages of ripening

b) fruits exhibiting decrease in respiration before final stages of ripening

c) fruits exhibiting increase in photosynthesis before final stages of ripening

d) fruits exhibiting decrease in photosynthesis before final stages of ripening

9. All are climacteric fruits that respond to ethylene except

a) apple

b) banana

c) grape

d) mango

10. Ethylene treated shoots shows triple response that include

a) epinasty (down ward curvature of leaves)

b) lateral cell expansion

c) loss of gravity response

d) all of the above

11. Aerenchyma formation in wet land species especially in rice is induced by

a) auxin and ethylene

b) cytokinin

c) ABA

d) ethylene

12. Which of the following enzyme production is enhanced by ethylene

a) amylase and protease

b) protease only

c) cellulase and chlorophyllase

d) cellulase and protease

13. Which of the following is an artificial ripening agent

a) ethaphone

b) 2,4-D

c) NAA

d) ethylene

14. Which of the following hormone stimulates ethylene release

a) auxin

b) cytokinin

c) gibberellin

d) abscisic acid

15. Ethylene production by organisms can be detected by

a) coloum chromatography

b) gas chromatography

c) spectrophotometer

d) colorimeter

Answers:

1-d

2-d

3-c

4-d

5-a

6-c

7-b

8-a

9-c

10-d

11-d

12-c

13-a

14-d

15-b

Multiple Choice Questions on Seed Germination

1. During seed germination, seed coat ruptures due to

a) Differentiation of cotyledons

b) Massive glycolysis in endosperm and cotyledons

c) Sudden increase in cell division

d) Massive imbibitions of water

2. Seed develops from

a) ovary

b) Embryo

c) Ovule

d) Embryo sac

3. An albuminous seed showing hypogeal germination is

a) castor

b) Bean

c) Gram

d) Maize

4. Proteinaceous part of maize endosperm is

a) Apophysis

b) scutellum

c) Aleurone layer

d) Peripheral layer

5.Vivipary is

a) Seed germination with subterranean cotyledons

b) Seed germination with epiterranean cotyledons

c) Fruit development without pollination

d) seed germination inside the fruit the fruit while attached to the plant

6. A gas required for germination of pea seed is

a) Nitrogen

b) Oxygen

c) Hydrogen

d) Water vapours

7. Seed dormancy allows the plants to

a) Overcome unfavourable climate conditions

b) Develop healthy seeds

c) Reduce viability

d) Prevent deterioration of seeds

8. Among the following which compound can induce seed dormancy?

a) ABA

b) Potassium nitrate

c) Gibberelllins

d) Ethylene

9. Protective covering over radical during seed germination is

a) Suspensor

b) coleorhiza

c) Epithelium

d) Coleoptile

10. Germination is epigeal in

Epigeal seed germination

a) Rice

b) Wheat

c) Zea mays

d) Helianthus

Learn more:

Multiple Choice Questions on Seeds

Multiple Choice Questions on Fruits

Multiple Choice Questions on Flower

Answer

d) Massive imbibitions of water

c) Ovule

d) Maize

c) Aleurone layer

d) seed germination inside the fruit the fruit while attached to the plant

b) Oxygen

a) Overcome unfavourable climate conditions

a) ABA

b) coleorhiza

d) Helianthus

MCQ on Dormancy and Seed germination

1. Dormancy is the

a) failure of a seed to germinate under favourable condition

b) failure of a seed to germinate under unfavourable condition

c) the ability of a seed to germinate under favourable condition

d) the ability of a seed to germinate under unfavourable condition

MCQ on Dormancy and Seed germination

2. Which of the following statement is true regarding dormancy?

a) Dormancy may be due to seed coats impermeability to CO_2

b) Dormancy helps the seed to overcome unfavourable condition

c) Dormancy helps the seed to germinate during unfavourable condition

d) Dormancy may be due to soft fragile seed coat

3. Which of the following is a natural germination inhibitor that induces dormancy?

a) auxin

b) cytokinin

c) ABA

d) gibberellin

4. Some seeds enter dormancy when exposed to unfavourable condition for some time. Such dormancy is called

a) immediate dormancy

b) primary dormancy

c) secondary dormancy

d) short term dormancy

5. Which of the following plant exhibit dormancy due to immature embryo?

a) Xanthium

b) Orchids

c) Hibiscus

d) Solanum

6. The process of weakening the seed coat to break dormancy is called

a) vernalization

b) scarification

c) photoperiodism

d) stratification

7. Photoblastic seeds are seeds

a) affected by light for germination

b) not affected by light for germination

c) independent of light for germination

d) affected by light and temperature for germination

8. Which is the pigment is involved in the germination of photoblastic seeds?

a) chlorophyll

b) carotenes

c) phytochromes

d) phaeophytin

9. Which of the following hormone is a dormancy inducer?

a) 2-4D

b) GA4

c) ABA

d) GA3

10. Which of the following is the structure in the seed coat that prevents water and O2 entry into seed thereby inducing dormancy?

a) strophiolar plug

b) pericarp

c) exocarp

d) epicarp

Learn more: MCQ on Plant physiology

Answers:

1. b) failure of a seed to germinate under unfavourable condition

2. b) Dormancy helps the seed to overcome unfavourable condition

3. c) ABA

4. c) secondary dormancy

5. b) Orchids

6. b) scarification

7.a) affected by light for germination

8. c) phytochromes

9. c) ABA

10. a) strophiolar plug

Apical dominance is affected by the hormone

IAA

ABA

GA

ethylene

2. Genetic dwarfness can be overcome by treatment with

auxins

gibberllins

auxins and cytokinins

ABA

3. To prevent over ripening, banana should be

stored on top of the refrigerator

given a dip in ascorbic acid

maintained at room temperature

refrigerated

4. Aging of plant organs can be delayed with the help of the hormone

auxin

ethylene

cytokinin

abscisic acid

5. Auxins are

growth catalysts

destroyers of growth

growth inhibitor

growth hormones

6. Bioassay for gibberellins is

Seed dormancy test

green leaf test

Avena curvature test

Dwarf maize test

7. Artificial ripening of fruits is accomplished by treatment with

Ethylene gas

IAA

Kinetin

Sodium chloride

8. Which of the following affects of auxins on plants are the basis for commercial application?

callus formation

curvature of stem

induction of root formation in stem cuttins

all of these

9. 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?

Light reduces length

They need light for photosynthesis

The apices of their stems are attracted by the light

Auxin accumulates on the shaded side to induce greater cell elongation on the side

10. Delay in senescence is caused by the spray of

IBA

GA

ABA

Cytokinin

Answers

1. IAA

2. gibberllins

3. given a dip in ascorbic acid

4. cytokinin

5. growth hormones

6. Dwarf maize test

7. Ethylene gas

8. induction of root formation in stem cuttins

9. Auxin accumulates on the shaded side to induce greater cell elongation on the side

10. Cytokinin

Jerry Justice Bio 1

I beseech thee, brethren & Sisters. In view of the betterment of our department, and not compromising the future of every Biological Science students out there. I urge u before all manner of protocols, that Mr. Clinton Owusu Boateng is indeed qualified and fit before God and Man to take the mantle onwards, leading us into greater heights. It is time the voice of Biossa which carries Life is heard loud and Clear. Master Clinton is a man whom I strongly believe has been through process, survived the Test of Time, been through the lower valleys and high Mountains. **Therefore fellow Biossan's the time is Now** I call for the support for Mr. Clinton O. Boateng to assume the Biossa presidential office. **Clinton for**