

National Testing Agency

Question Paper Name :	Plant Physiology and Crop Physiology 17th September Shift 2
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Plant Physiology and Crop Physiology

Group Number :	1
Group Id :	19088983
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	480
Is this Group for Examiner? :	No

Part A: General Knowledge

Section Id :	190889173
Section Number :	1
Section type :	Online

Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889213
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 1908899262 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Which of the following is the device used to measure the power and speed of the wind?

1. Avometer
2. Anemometer
3. Airometer
4. Aviontimeter

Options :

19088936941. 1
19088936942. 2
19088936943. 3
19088936944. 4

Question Number : 2 Question Id : 1908899263 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Optical fibre used the concept of which of the following?

1. Reflection
2. Refraction
3. Total internal reflection
4. Total internal refraction

Options :

- 19088936945. 1
- 19088936946. 2
- 19088936947. 3
- 19088936948. 4

Question Number : 3 Question Id : 1908899264 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Yellow vein mosaic is the viral disease of which of the following plants?

- 1. Ladyfinger
- 2. Papaya
- 3. Sugarcane
- 4. Banana

Options :

- 19088936949. 1
- 19088936950. 2
- 19088936951. 3
- 19088936952. 4

Question Number : 4 Question Id : 1908899265 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following organ(s) is affected by Mumps disease?

- 1. Entire body
- 2. Skin
- 3. Eye
- 4. Parotid

Options :

- 19088936953. 1
- 19088936954. 2

19088936956. 4

Question Number : 5 Question Id : 1908899266 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is the chemical name of vitamin B₂?

1. Riboflavin
2. Calciferol
3. Pyridoxin
4. Niacin

Options :

19088936957. 1

19088936958. 2

19088936959. 3

19088936960. 4

Question Number : 6 Question Id : 1908899267 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is not the input unit of the computer?

1. Mouse
2. Keyboard
3. Screen
4. Scanner

Options :

19088936961. 1

19088936962. 2

19088936963. 3

19088936964. 4

Question Number : 7 Question Id : 1908899268 Question Type : MCQ Option Shuffling : No Is

Correct Marks : 4 Wrong Marks : 1

The digital computer operates on which of the following principle?

1. Measurement
2. Calculation
3. Logical
4. Electrification

Options :

19088936965. 1

19088936966. 2

19088936967. 3

19088936968. 4

Question Number : 8 Question Id : 1908899269 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The non-cooperation movement of Gandhiji was launched in which of the following year?

1. 1915
2. 1922
3. 1920
4. 1930

Options :

19088936969. 1

19088936970. 2

19088936971. 3

19088936972. 4

Question Number : 9 Question Id : 1908899270 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

An Islamic revivalist movement named Wahabi movement was founded by which of the following person?

1. Sian Saheb
2. Syed Ahmed
3. Haji Shariat-Allah
4. DaduMian

Options :

19088936973. 1

19088936974. 2

19088936975. 3

19088936976. 4

Question Number : 10 Question Id : 1908899271 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is considered as the “Magna Carta of England Education in India”?

1. Hunter education commission
2. Lord Macaulay’s Minute
3. Wood’s Despatch
4. Thomas Babington Macaulay

Options :

19088936977. 1

19088936978. 2

19088936979. 3

19088936980. 4

Question Number : 11 Question Id : 1908899272 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following nutrient does not come under the ambit of 'macro-nutrients in Soil Health Card?

1. Nitrogen
2. Zinc
3. Phosphorous
4. Potassium

Options :

19088936981. 1

19088936982. 2

19088936983. 3

19088936984. 4

Question Number : 12 Question Id : 1908899273 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Cole crops, root crops and legumes come under the ambit of which of the following?

1. Olericulture
2. Pomology
3. Viticulture
4. Arboriculture

Options :

19088936985. 1

19088936986. 2

19088936987. 3

19088936988. 4

Question Number : 13 Question Id : 1908899274 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The study of individual trees, shrubs, vines, and perennial woody plants is known as which of the following?

1. Turf management
2. Arboriculture
3. Pomology
4. Viticulture

Options :

19088936989. 1

19088936990. 2

19088936991. 3

19088936992. 4

Question Number : 14 Question Id : 1908899275 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The ministry is implementing MIDH (Mission for Integrated Development of Horticulture) with effect from which of the following year?

1. 2012-13
2. 2019-20
3. 2015-16
4. 2014-15

Options :

19088936993. 1

19088936994. 2

19088936995. 3

19088936996. 4

Question Number : 15 Question Id : 1908899276 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The interaction of soils with living things, particularly plants are well known as which of the following?

1. Edaphology
2. Pedology
3. Soil zoology
4. Pedogenesis

Options :

19088936997. 1

19088936998. 2

19088936999. 3

19088937000. 4

Question Number : 16 Question Id : 1908899277 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following systems has also incorporated social aspects in itself?

1. Landscaping
2. Permaculture
3. Horticulture
4. Forest gardening

Options :

19088937001. 1

19088937002. 2

19088937003. 3

19088937004. 4

Question Number : 17 Question Id : 1908899278 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What do you term the phenomenon whereby the specific gene is added to the plant for producing a desirable phenotype?

1. Genetic manipulation
2. Genetic recombination
3. Genetic modification
4. Genetic hybridisation

Options :

19088937005. 1

19088937006. 2

19088937007. 3

19088937008. 4

Question Number : 18 Question Id : 1908899279 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is the focus of the participatory plant breeding program?

1. Scientists
2. Plants
3. Environment
4. Farmers

Options :

19088937009. 1

19088937010. 2

19088937011. 3

19088937012. 4

Question Number : 19 Question Id : 1908899280 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

How do you term the form of agriculture, in which, industrialized production of crops and animal products takes place?

1. Manufactured agriculture
2. Modern agriculture
3. Industrial agriculture
4. Mechanistic agriculture

Options :

19088937013. 1

19088937014. 2

19088937015. 3

19088937016. 4

Question Number : 20 Question Id : 1908899281 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Micro-irrigation fund of Rs. 5,000 crore has been placed with which of the following organization?

1. NABARD
2. IDBI
3. SBI
4. RRBs

Options :

19088937017. 1

19088937018. 2

19088937019. 3

19088937020. 4

Part B Core : Crop Sciences-III

Section Id : 190889174

Section Number : 2

Section type : Online

Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889214
Question Shuffling Allowed :	Yes

Question Number : 21 Question Id : 1908899282 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following indicates pH of a cola drink?

1. 7.6
2. 8.0
3. 3.0
4. 5.6

Options :

19088937021. 1

19088937022. 2

19088937023. 3

19088937024. 4

Question Number : 22 Question Id : 1908899283 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

19088937025. 1

19088937026. 2

19088937027. 3

19088937028. 4

Question Number : 23 Question Id : 1908899284 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following bond/ interaction is involved in stabilizing the structure of globular proteins?

1. Multiple weak interactions
2. Hydrophobic interactions
3. Conformation of protein molecules
4. Twist of α -helix

Options :

19088937029. 1

19088937030. 2

19088937031. 3

19088937032. 4

Question Number : 24 Question Id : 1908899285 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : All amino acids except glycine are chiral active.

Reason R : α -carbon of glycine is bonded to carboxyl group, an amino group, R group and oxygen atom.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both A and R are true and R is the correct explanation of A.
2. Both A and R are true but R is NOT the correct explanation of A.
3. A is true but R is false.
4. A is false but R is true.

Options :

19088937033. 1

19088937034. 2

19088937035. 3

19088937036. 4

Question Number : 25 Question Id : 1908899286 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Plant products are broken down to more complex carbohydrates and peptides during malting.

Statement II: In malting, polysaccharides breakdown to disaccharides and monosaccharides.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937037. 1

19088937038. 2

19088937039. 3

19088937040. 4

Question Number : 26 Question Id : 1908899287 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match **List I** with **List II**

List I (Enzymes)	List II (Substrate)
A. Acyl carrier protein	I. β -keto group to β -hydroxyl group
B. Malonyl-CoA-ACP transferase	II. Reduces double bond, form substrate Acyl-ACP
C. Enoyl ACP reductase	III. Transfers malonyl group from CoA to ACP
D. β -ketoacyl-ACP reductase	IV. Carries acyl groups in thio-ester linkage

Choose the **correct** answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - II, B - I, C - IV, D - III
3. A - IV, B - III, C - II, D - I
4. A - II, B - IV, C - I, D - III

Options :

19088937041. 1

19088937042. 2

19088937043. 3

19088937044. 4

Question Number : 27 Question Id : 1908899288 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

How many folds the solution of pH 4 is acidic than a solution of pH 6?

1. 10 times
2. 100 times
3. 2 times
4. 1.5 times

Options :

19088937045. 1

19088937046. 2

19088937047. 3

19088937048. 4

Question Number : 28 Question Id : 1908899289 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Aspartame, an artificial sweetener is a calorie-free substance.

Reason R : Aspartame is broken down to aspartate, phenyl alanine and methanol.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937049. 1

19088937050. 2

19088937051. 3

19088937052. 4

Question Number : 29 Question Id : 1908899290 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following vitamin is *NOT* a component of coenzymes required for pyruvate dehydrogenase complex?

1. Biotin
2. Thiamine
3. Niacin
4. Riboflavin

Options :

19088937053. 1

19088937054. 2

19088937055. 3

19088937056. 4

Question Number : 30 Question Id : 1908899291 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I (Amino Acid)	List II (One Letter Symbol)
A. Tryptophan	I. Y
B. Glutamine	II. R
C. Arginine	III. Q
D. Tyrosine	IV. W

Choose the **correct** answer from the options given below:

1. A - I, B - III, C - II, D - IV
2. A - III, B - II, C - I, D - IV
3. A - III, B - IV, C - II, D - I
4. A - IV, B - III, C - II, D - I

Options :

19088937057. 1

19088937058. 2

19088937059. 3

19088937060. 4

Question Number : 31 Question Id : 1908899292 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following sentences-

- A. Stereoisomers are the molecule with same chemical bond and same configuration.
- B. Stereoisomers are the molecule with same chemical bond but different configuration.
- C. Enantiomers are the pair of stereoisomers that are mirror images to each other.
- D. Configurational isomers cannot be interconverted without breaking one or more bonds.

Choose the *correct* answer from the options given below:

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

Options :

19088937061. 1

19088937062. 2

19088937063. 3

19088937064. 4

Question Number : 32 Question Id : 1908899293 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088937065. 1
- 19088937066. 2
- 19088937067. 3
- 19088937068. 4

Question Number : 33 Question Id : 1908899294 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match **List I** with **List II**

List I (Cell organelle)	List II (Function)
A. Lysosomes	I. Degradation of fatty acids and amino acids
B. Peroxisomes	II. Degradation of extracellular macromolecules
C. Nucleolus	III. Sorting center of the cell
D. Golgi apparatus	IV. Site of rRNA synthesis

Choose the **correct** answer from the options given below:

- 1. A - II, B - III, C - IV, D - I
- 2. A - I, B - II, C - III, D - IV
- 3. A - II, B - I, C - IV, D - III
- 4. A - IV, B - I, C - II, D - III

Options :

- 19088937069. 1
- 19088937070. 2
- 19088937071. 3
- 19088937072. 4

Question Number : 34 Question Id : 1908899295 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which one of the following equations is correct as per the Michaelis-Menten equation for an enzyme-catalyzed reaction?

1. $v = \frac{Km + [S]}{Vmax[S]}$
2. $v = \frac{Vmax[S]}{Km + [S]}$
3. $v = \frac{Vmax + [S]}{Km[S]}$
4. $v = \frac{Vmax + [S]}{Km + [S]}$

Options :

19088937073. 1

19088937074. 2

19088937075. 3

19088937076. 4

Question Number : 35 Question Id : 1908899296 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: The optimum leaf area index is between 3 to 4 for crops with horizontally oriented leaves.

Statement II: The optimum leaf area index is between 6 to 9 for crops with upright leaves.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937077. 1

19088937078. 2

19088937079. 3

19088937080. 4

Question Number : 36 Question Id : 1908899297 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : CAM plants like pineapple and sisal, have higher water use efficiency.

Reason R : In CAM plants, stomata are closed during day time, transpiration is, therefore, negligible.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937081. 1

19088937082. 2

19088937083. 3

19088937084. 4

Question Number : 37 Question Id : 1908899298 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Manganese deficiency is characterized by a reduction in intermodal growth results in rosette habit of growth.

Statement II: Nickel-deficient plants accumulate urea in their leaves and, consequently, show leaf tip necrosis.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937085. 1

19088937086. 2

19088937087. 3

19088937088. 4

Question Number : 38 Question Id : 1908899299 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following statements-

- A. Decrease in leaf area is an early adaptive response to water deficit.
- B. Water deficit enhances root extension into deeper moist soil.
- C. Closing of stomata takes place during a water deficit period in response to ethylene.
- D. Water deficit limits photosynthesis within the chloroplast.

Choose the *correct* answer from the options given below:

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

Options :

19088937089. 1

19088937090. 2

19088937091. 3

19088937092. 4

Question Number : 39 Question Id : 1908899300 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : In photoperiodism, the leaf detects the photoperiod and the bud becomes the flower.

Reason R : The flowering hormone- florigen acts as a stimulus transmitted from the leaf to the bud.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937093. 1

19088937094. 2

19088937095. 3

19088937096. 4

Question Number : 40 Question Id : 1908899301 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

1. Given below are two statements-

Statement I: Calcium is used in the synthesis of new cell walls, particularly the middle lamellae that separates newly divided cells.

Statement II: Nickel-deficient plants accumulate urea in their leaves and, consequently, show leaf tip necrosis.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937097. 1

19088937098. 2

19088937099. 3

19088937100. 4

Question Number : 41 Question Id : 1908899302 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I (Terms)	List II (Scientist)
A. Water potential	I. W. W. Garner and H. A. Allard
B. Vernalization	II. Arnon and Stout
C. Photoperiodism	III. R. O. Slatyer and S. A. Taylor
D. Essential element	IV. T. D. Lysenko

Choose the **correct** answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - III, B - I, C - IV, D - II
3. A - II, B - I, C - IV, D - III
4. A - II, B - IV, C - I, D - III

Options :

19088937101. 1

19088937102. 2

19088937103. 3

19088937104. 4

Question Number : 42 Question Id : 1908899303 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Chlorine is required for the water-splitting reaction of photosynthesis through which oxygen is produced.

Reason R : Plants deficient in chlorine develop wilting of the leaf tips followed by general leaf chlorosis and necrosis.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937105. 1

19088937106. 2

19088937107. 3

19088937108. 4

Question Number : 43 Question Id : 1908899304 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following plant hormone is known as ripening hormone?

1. ABA
2. Auxin
3. Ethylene
4. Gibberellin

Options :

19088937109. 1

19088937110. 2

19088937111. 3

19088937112. 4

Question Number : 44 Question Id : 1908899305 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Non pigmented plastids are called leucoplasts.

Statement II: The most important type of leucoplast is the amyloplast, a starch storing plastid.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937113. 1

19088937114. 2

19088937115. 3

19088937116. 4

Question Number : 45 Question Id : 1908899306 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088937117. 1
- 19088937118. 2
- 19088937119. 3
- 19088937120. 4

Question Number : 46 Question Id : 1908899307 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following statements

- A. Cell membrane lipids are amphipathic in nature
- B. Cell membrane peripheral proteins are water-soluble in nature
- C. Phase transition is affected only by protein component of cell membrane
- D. Cell membrane integral proteins are water-insoluble in nature

Choose the *correct* answer from the options given below

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

Options :

- 19088937121. 1
- 19088937122. 2
- 19088937123. 3
- 19088937124. 4

Question Number : 47 Question Id : 1908899308 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: DNA consists of four bases - Adenine (A), Guanine (G), Cytosine (C) and Thymine (T).

Statement II: DNA double helix was discovered by Watson, Crick and Wilkins.

In light of the above statements, choose the *correct* answer from the options given below

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937125. 1

19088937126. 2

19088937127. 3

19088937128. 4

Question Number : 48 Question Id : 1908899309 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following equation is correct for estimating melting temperature (T_m) of primer target sequence duplex?

1. $[4(G+C) + 2(A+T)]$
2. $[2(G+C) + 4(A+T)]$
3. $[3(G+C) + 2(A+T)]$
4. $[2(G+C) + 3(A+T)]$

Options :

19088937129. 1

19088937130. 2

19088937131. 3

19088937132. 4

Question Number : 49 Question Id : 1908899310 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : The enzyme glutathione synthase is designated as EC 6.3.2.3.

Reason R : Glutathione synthase catalyze covalent bond formation by hydrolysis of ATP/GTP.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937133. 1

19088937134. 2

19088937135. 3

19088937136. 4

Question Number : 50 Question Id : 1908899311 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: Mobility of hydrogen atoms from one position to another in nitrogenous bases is the primary cause of tautomeric shifts.

Statement II: Base-pair substitutions involving replacement of purine with pyrimidine and *vice versa* are called transitions.

In light of the above statements, choose the *correct* answer from the options given below

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937137. 1

19088937138. 2

19088937139. 3

19088937140. 4

Question Number : 51 Question Id : 1908899312 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I (Discovery/Invention)	List II (Discoverer)
A. Polymerase Chain Reaction	I. Francis H Arnold
B. Directed evolution of enzymes	II. Kary B Mullis
C. Water Channels	III. Barbara McClintock
D. Mobile Genetic Elements	IV. Peter Agre

Choose the **correct** answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - III, B - I, C - IV, D - II
3. A - II, B - I, C - IV, D - III
4. A - II, B - IV, C - I, D - III

Options :

19088937141. 1

19088937142. 2

19088937143. 3

19088937144. 4

Question Number : 52 Question Id : 1908899313 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Three codons – UAG (amber), UAA (ochre), UGA (opal) specify polypeptide chain termination.

Reason R : Three codons (amber, ochre and opal) are recognized by Release Factors (RF), rather than tRNAs

In light of the above statements, choose the *correct* answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937145. 1

19088937146. 2

19088937147. 3

19088937148. 4

Question Number : 53 Question Id : 1908899314 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I (Selectable marker gene)	List II (Selection mechanism)
A. epsps	I. Resistance to D-serine
B. nptIII	II. Herbicide resistance
C. gfp	III. Antibiotic resistance
D. dsdA	IV. Visual screening

Choose the **correct** answer from the options given below:

1. A-I, B-II , C-III, D-IV
2. A-II , B-III, C-IV, D-I
3. A-II , B-IV, C-III, D-I
4. A-II, B-IV, C-I, D-III

Options :

19088937150. 2

19088937151. 3

19088937152. 4

Question Number : 54 Question Id : 1908899315 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who proved the semiconservative mode of DNA replication?

1. Watson and Crick
2. Hershey and Chase
3. Meselson and Stahl
4. Charpentier and Doudna

Options :

19088937153. 1

19088937154. 2

19088937155. 3

19088937156. 4

Question Number : 55 Question Id : 1908899316 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

19088937157. 1

19088937158. 2

19088937159. 3

19088937160. 4

Question Number : 56 Question Id : 1908899317 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Lactic acid is formed due to extreme activity in aerobic organisms.

Reason R: NAD^+ is regenerated from NADH by the reduction of pyruvate to lactate.

In light of the above statements, choose the **correct** answer from the options given below

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937161. 1

19088937162. 2

19088937163. 3

19088937164. 4

Question Number : 57 Question Id : 1908899318 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following enzymes are involved in Nucleotide-excision repair?

- A. DNA polymerase I
- B. DNA glycosylases
- C. DNA ligase
- D. ABC excinuclease

Choose the **correct** answer from the options given below:

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

Options :

19088937165. 1

19088937166. 2

19088937167. 3

19088937168. 4

Question Number : 58 Question Id : 1908899319 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who has proposed the chromosomal theory of heredity?

- 1. William Bateson
- 2. Walter Sutton
- 3. Seymour Benzer
- 4. Gregor Johann Mendel

Options :

19088937169. 1

19088937170. 2

19088937171. 3

19088937172. 4

Question Number : 59 Question Id : 1908899320 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

First description of bacterial characteristics from human mouth as 'animalcules' written to the Royal Society of Science was reported by a -

1. French chemist
2. German physician
3. Dutch merchant
4. Russian naturalist

Options :

19088937173. 1

19088937174. 2

19088937175. 3

19088937176. 4

Question Number : 60 Question Id : 1908899321 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I (Function)	List II (Enzyme involved)
A. RNA primer synthesis	I. Helicase
B. Negative supercoil	II. DNA polymerase III
C. Unwinding of DNA	III. Primase
D. Proof reading	IV. Gyrase
	V. RNA polymerase II

Choose the *correct* answer from the options given below:

1. A -V , B -I , C -IV , D -III
2. A -III , B -IV , C -I , D -II
3. A -V , B -I , C -II , D -III
4. A -III, B -I, C -IV, D -II

Options :

19088937178. 2

19088937179. 3

19088937180. 4

Question Number : 61 Question Id : 1908899322 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following statements regarding decomposition of organic matter-

- A. C:N ratio of fresh plant material ranges from 20:1 to 30:1 in legumes
- B. If C:N ratio is less than 25:1, immobilization exceeds mineralization
- C. A compost is considered superior if the C:N ratio is 20:1 or less
- D. Ideal C:N ratio for maximum decomposition is 20:1 to 25:1

Choose the *correct* answer from the options given below:

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

Options :

19088937181. 1

19088937182. 2

19088937183. 3

19088937184. 4

Question Number : 62 Question Id : 1908899323 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Differential staining method requires more than one stain and more steps.

Statement II: Gram staining is a differential staining method which divides bacteria in two major groups.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

Options :

19088937185. 1

19088937186. 2

19088937187. 3

19088937188. 4

Question Number : 63 Question Id : 1908899324 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

10 g soil sample from groundnut rhizosphere was put in a flask containing 90 ml sterile distilled water. 1 ml content was drawn from the flask and transferred to a tube containing 9 ml sterile distilled water and similarly was serially diluted up to 8th dilution. 1 ml each from 6th, 7th and 8th dilution was used to plate on nutrient agar medium by pour plate method in triplicates. After incubation at suitable environmental conditions for 24 hours, the count of 62, 60, 58 colonies was observed on the inoculated plates in 7th dilution.

What is the total population of the bacteria present in the soil sample?

1. 180 CFU/g
2. 60×10^8 CFU/g
3. 60×10^7 CFU/g
4. 6×10^7 CFU/g

Options :

19088937189. 1

19088937190. 2

19088937191. 3

Question Number : 64 Question Id : 1908899325 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Denaturing gradient gel electrophoresis (DGGE) is used for rapid fingerprint analysis of microbial community composition, diversity and dynamics.

Reason R : DGGE is used for bacterial identification based on capability to utilize various carbon sources.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937193. 1

19088937194. 2

19088937195. 3

19088937196. 4

Question Number : 65 Question Id : 1908899326 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who suggested the five kingdom concept for the classification of living organisms?

1. E. Hackel
2. Copeland
3. Lennaeus
4. R. H. Whittakar

Options :

19088937197. 1

19088937198. 2

19088937199. 3

19088937200. 4

Question Number : 66 Question Id : 1908899327 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I (Prokaryotic cell structure)	List II (Function)
A. Flagella	I. Virulence
B. Fimbriae	II. Food reservoir
C. Capsule	III. Motility
D. Cell inclusions	IV. Attachment

Choose the **correct** answer from the options given below:

1. A - II , B - III , C - IV , D - I
2. A - IV , B - I , C - III , D - II
3. A - III , B - IV , C - I , D - II
4. A - III , B - II , C - IV , D - I

Options :

19088937201. 1

19088937202. 2

19088937203. 3

19088937204. 4

Question Number : 67 Question Id : 1908899328 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088937205. 1
- 19088937206. 2
- 19088937207. 3
- 19088937208. 4

Question Number : 68 Question Id : 1908899329 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Arrange taxonomic hierarchical positions from higher to lower.

- A. Phylum
- B. Class
- C. Domain
- D. Family
- E. Order

Choose the **correct** answer sequence from the options given below:

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

Options :

- 19088937209. 1
- 19088937210. 2
- 19088937211. 3
- 19088937212. 4

Question Number : 69 Question Id : 1908899330 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In which phase of growth curve during batch culture, bacteria multiply exponentially?

1. Lag phase
2. Log phase
3. Stationary phase
4. Death phase

Options :

19088937213. 1

19088937214. 2

19088937215. 3

19088937216. 4

Question Number : 70 Question Id : 1908899331 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Biofertilizers should be preferred over chemical fertilizers.

Reason R : The high cost and environmental concerns associated with chemical fertilizers.

In light of the above statements, choose the **correct** answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937217. 1

19088937218. 2

19088937219. 3

19088937220. 4

Part C : Plant Physiology and Crop Physiology

Section Id :	190889175
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889215
Question Shuffling Allowed :	Yes

Question Number : 71 Question Id : 1908899332 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who developed the pressure probe for higher plant cells?

1. A.B. Bruce *et al.*
2. E. Steudle *et al.*
3. M.T. Jenkins *et al.*
4. D.F. Jones *et al.*

Options :

19088937221. 1

19088937222. 2

19088937223. 3

19088937224. 4

Question Number : 72 Question Id : 1908899333 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Diffusion is rapid over short distances but gets slow over long distances.

Reason R: When a substance diffuses away from the starting point, the concentration gradient becomes less steep, and thus net movement becomes slower.

In light of the above statements, choose the **correct** answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937225. 1

19088937226. 2

19088937227. 3

19088937228. 4

Question Number : 73 Question Id : 1908899334 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Lysosomes, peroxisomes and glyoxysomes are collectively known as microbodies.

Statement II: Glyoxysomes are specialized plant peroxisomes which carry out the reactions of the glyoxylate cycle.

In light of the above statements, choose the **correct** answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937229. 1

19088937230. 2

19088937231. 3

19088937232. 4

Question Number : 74 Question Id : 1908899335 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which equation relates the membrane potential and the distribution of an ion at equilibrium?

1. Bowling Equation
2. Dunlop Equation
3. Goldman Equation
4. Nernst Equation

Options :

19088937233. 1

19088937234. 2

19088937235. 3

19088937236. 4

Question Number : 75 Question Id : 1908899336 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Hydroactive closure is likely to take place in the air of low humidity, when direct water loss from the guard cells is too rapid to be balanced by the water movement into the guard cells from adjacent epidermal cells.

Statement II: Hydropassive closure of the stomata takes place when the whole leaf or the roots are dehydrated and depends on metabolic processes in the guard cells.

In light of the above statements, choose the **correct** answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937237. 1

19088937239. 3

19088937240. 4

Question Number : 76 Question Id : 1908899337 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: In clock hypothesis, the photoperiodic timekeeping depends on the endogenous circadian oscillator involved in the daily rhythms.

Reason R: The role of the photoperiod is to set the phase of the rhythm in a way leading to the measurement of time in darkness and of the critical night length.

In light of the above statements, choose the **correct** answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937241. 1

19088937242. 2

19088937243. 3

19088937244. 4

Question Number : 77 Question Id : 1908899338 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which is the reaction place for phosphoenolpyruvate carboxykinase type of C_4 pathway?

1. Chloroplast
2. Lysosome
3. Peroxisome
4. Cytosol

Options :

19088937246. 2

19088937247. 3

19088937248. 4

Question Number : 78 Question Id : 1908899339 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Cu^{2+} element serves as a cofactor for an enzyme cytochrome oxidase.

Statement II: Zn^{2+} element serves as a cofactor for an enzyme glutathione peroxidase.

In light of the above statements, choose the **correct** answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937249. 1

19088937250. 2

19088937251. 3

19088937252. 4

Question Number : 79 Question Id : 1908899340 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088937253. 1
- 19088937254. 2
- 19088937255. 3
- 19088937256. 4

Question Number : 80 Question Id : 1908899341 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following statements-

- A. Turgor pressure is an actual pressure which develops in closed system as a result of diffusion.
- B. Vapour pressure is the pressure exerted against the walls of the container and the surface of the water by the water vapour molecules.
- C. Wall pressure is the back pressure exerted by the cell wall on the protoplast and this increases free energy of water molecules.
- D. Root pressure is the pressure developing in the trachery elements of the xylem as a result of the metabolic activities of root.

Choose the **correct** answer from the options given below:

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

Options :

- 19088937257. 1
- 19088937258. 2
- 19088937259. 3
- 19088937260. 4

Question Number : 81 Question Id : 1908899342 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The rice plants have a juvenile phase of -

1. 15 days
2. 20 days
3. 25 days
4. 30 days

Options :

19088937261. 1

19088937262. 2

19088937263. 3

19088937264. 4

Question Number : 82 Question Id : 1908899343 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : There is a net accumulation of carbon in leaves, usually as starch during photosynthesis in plants.

Reason R : The rate of photosynthesis is greater than the rate of translocation.

In light of the above statements, choose the **correct** answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937265. 1

19088937266. 2

19088937267. 3

19088937268. 4

Question Number : 83 Question Id : 1908899344 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match **List I** with **List II**

List I(Plant group)	List II(Osmotic pressure)
A. Summer ephimerals	I. 3-6
B. Succulents	II. 8-42
C. Xerophytes	III. 4-24
D. Epiphytes	IV. 14-57

Choose the **correct** answer from the options given below:

1. A - II, B - III, C - IV, D - I
2. A - III, B - I, C - IV, D - II
3. A - III, B - IV, C - I, D - II
4. A - II, B - IV, C - I, D - III

Options :

19088937269. 1

19088937270. 2

19088937271. 3

19088937272. 4

Question Number : 84 Question Id : 1908899345 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is NOT correct regarding the relationship of osmotic pressure in plants?

1. DPD decreases with increase in TP
2. TP decreases towards flaccid condition
3. DPD is the difference between OP and TP
4. DPD increases towards turgid condition

Options :

19088937273. 1

19088937274. 2

19088937275. 3

19088937276. 4

Question Number : 85 Question Id : 1908899346 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Leaves that are oriented away from the sun are called paraheliotropic.

Statement II: Leaves that gain energy by orienting themselves normal to the sunlight are referred to as diaheliotropic.

In light of the above statements, choose the **correct** answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937277. 1

19088937278. 2

19088937279. 3

19088937280. 4

Question Number : 86 Question Id : 1908899347 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following enzyme is NOT regulated by light in plants?

1. Fructose 1,6-bisphosphatase
2. NADP-glyceraldehyde-3-phosphate dehydrogenase
3. Phosphoglycolate phosphatase
4. Sedoheptulose 1,7-bisphosphatase

Options :

19088937281. 1

19088937282. 2

19088937283. 3

19088937284. 4

Question Number : 87 Question Id : 1908899348 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Some plant hormones act as positive regulators of senescence, while others act as negative regulators.

Statement II: The same hormone can act either as a positive or negative regulator of the senescence process depending on the age of the leaf.

In light of the above statements, choose the **correct** answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937285. 1

19088937286. 2

19088937287. 3

19088937288. 4

Question Number : 88 Question Id : 1908899349 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match **List I** with **List II**

List I (Plant Growth Hormones)	List II (Function)
A. Auxin	I. Forms adventitious shoots from unwounded leaf veins and petioles
B. Gibberellins	II. Promotes the desiccation tolerance of the embryo
C. Cytokinins	III. Maintains the capacity for acid-induced loosening of cell wall
D. Absciscic acid	IV. Stimulates stem growth in dwarf and rosette plants

Choose the **correct** answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - III, B - I, C - IV, D - II
3. A - II, B - I, C - IV, D - III
4. A - II, B - I, C - III, D - IV

Options :

19088937289. 1

19088937290. 2

19088937291. 3

19088937292. 4

Question Number : 89 Question Id : 1908899350 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : IAA is generally considered to be the root cap inhibitor.

Reason R : IAA is more inhibitory to root growth than ABA when applied directly to the elongation zone.

In light of the above statements, choose the **correct** answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937293. 1

19088937294. 2

19088937295. 3

19088937296. 4

Question Number : 90 Question Id : 1908899351 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is an active brassinosteroid in plants?

1. Campesterol
2. Cathasterone
3. Castasterone
4. Teasterone

Options :

19088937297. 1

19088937298. 2

19088937299. 3

19088937300. 4

Question Number : 91 Question Id : 1908899352 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following statements regarding distinct phases of leaf senescence-

A. Most of the autolysis of cellular organelles and macromolecules occurs during the generative phase of leaf senescence.

B. The leaf receives developmental and environmental signals that initiate a decline in photosynthesis during the initiation phase of leaf senescence.

C. The abscission layer forms during the terminal phase of leaf senescence.

D. During the terminal phase, autolysis is completed and cell separation takes place at the abscission layer, resulting in leaf abscission.

Choose the **correct** answer from the options given below:

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

Options :

19088937301. 1

19088937302. 2

19088937303. 3

19088937304. 4

Question Number : 92 Question Id : 1908899353 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: GOGAT catalyzes the reaction on glutamate to form glutamine.

Statement II: GS catalyzes the reaction on 2-oxoglutarate to form 2-glutamates.

In light of the above statements, choose the **correct** answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937305. 1

19088937306. 2

19088937307. 3

19088937308. 4

Question Number : 93 Question Id : 1908899354 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

How many ATPs are required by the *nitrogenase* enzyme complex to fix one N_2 to produce $2NH_3$?

1. 14 ATP
2. 16 ATP
3. 18 ATP
4. 20 ATP

Options :

19088937309. 1

19088937310. 2

19088937311. 3

19088937312. 4

Question Number : 94 Question Id : 1908899355 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following factor does NOT regulate the expression of the genes coding for *nitrate reductase* and the activity of the enzyme?

1. Asparagine residues
2. Carbohydrate levels
3. Light
4. Nitrate concentration

Options :

19088937313. 1

19088937314. 2

19088937315. 3

19088937316. 4

Question Number : 95 Question Id : 1908899356 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I (Host Plant)	List II (N-fixing prokaryotic genera)
A. Leguminous plants	I. <i>Nostoc</i>
B. Actinorhizal plants	II. <i>Azorhizobium</i>
C. Gunnera	III. <i>Anabaena</i>
D. Azolla	IV. <i>Frankia</i>

Choose the **correct** answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - III, B - I, C - IV, D - II
3. A - II, B - I, C - IV, D - III
4. A - II, B - IV, C - I, D - III

Options :

19088937317. 1

19088937318. 2

19088937319. 3

19088937320. 4

Question Number : 96 Question Id : 1908899357 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I (Range of the electromagnetic spectrum)	List II (Wavelength band)
A. Thermal infra-red	I. 900 to 1700 nm
B. Short wave infra-red hyper spectral	II. 8000 to 14000 nm
C. Near infra-red	III. 400 to 1000 nm
D. Visible near infra-red hyper spectral	IV. 1000 to 2500 nm

Choose the **correct** answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - III, B - I, C - IV, D - II
3. A - II, B - I, C - IV, D - III
4. A - II, B - IV, C - I, D - III

Options :

19088937321. 1

19088937322. 2

19088937323. 3

19088937324. 4

Question Number : 97 Question Id : 1908899358 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Nanaji Deshmukh Plant Phenomics Centre is located at

1. ICAR- Indian Agricultural Research Institute, Jharkhand
2. ICARI- National Institute of Abiotic Stress Management, Baramati
3. ICAR- Indian Agricultural Research Institute, New Delhi
4. ICAR- Central Research Institute of Dryland Agriculture, Hyderabad

Options :

19088937325. 1

19088937326. 2

19088937327. 3

19088937328. 4

Question Number : 98 Question Id : 1908899359 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Conventional phenotyping is time and labour intensive, and often destructive and hence is a bottleneck in breeding crop varieties with climate resilience.

Statement II: Phenomics will be useful for accurate phenotyping of the germplasm throughout the life cycle in controlled stress conditions to identify superior genes and genotypes for the development of climate-resilient crop varieties.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937329. 1

19088937330. 2

19088937331. 3

19088937332. 4

Question Number : 99 Question Id : 1908899360 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Arrange the major stages of *in vitro* micropropagation in proper sequence.

- A. Transfer of plantlets to sterilized soil for hardening under greenhouse environment.
- B. Multiplication of shoots using a defined culture medium.
- C. Selection and maintenance of stock plants for culture initiation.
- D. Rooting of regenerated shoots *in vitro*.
- E. Initiation and establishment of aseptic culture.

Choose the **correct** answer from the options given below:

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

Options :

19088937333. 1

19088937334. 2

19088937335. 3

19088937336. 4

Question Number : 100 Question Id : 1908899361 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : pH of the plant tissue culture media affects the uptake of ions and for most of the culture media pH of 5.0 to 6.0 before sterilization is considered optimal.

Reason R : Higher pH is likely to give a hard medium while a low pH results in unsatisfactory solidification of the agar.

In light of the above statements, choose the *correct* answer from the options given below:

- 1. Both **A** and **R** are true and **R** is the correct explanation of **A**
- 2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
- 3. **A** is true but **R** is false
- 4. **A** is false but **R** is true

Options :

19088937337. 1

19088937338. 2

19088937339. 3

19088937340. 4

Question Number : 101 Question Id : 1908899362 Question Type : MCQ Option Shuffling : No**Is Question Mandatory : No****Correct Marks : 4 Wrong Marks : 1**

Match List I with List II

List I (Scientist)	List II (Contribution)
A. Van Overbeek	I. Concept of hormonal control of organ formation
B. Cocking	II. Demonstrated for the first time the stimulatory effect of coconut milk (embryo sac fluid) on embryo development and callus formation in <i>Datura</i>
C. Skoog and Miller	III. First continuously growing tissue cultures from carrot root cambium were established
D. Gautheret	IV. Introduced the concept of enzymatic isolation of plant protoplasts

Choose the correct answer from the options given below:

1. A - III, B - IV, C - I, D - II

2. A - III, B - I, C - IV, D - II

3. A - II, B - I, C - IV, D - III

4. A - II, B - IV, C - I, D - III

Options :

19088937341. 1

19088937342. 2

19088937343. 3

19088937344. 4

Question Number : 102 Question Id : 1908899363 Question Type : MCQ Option Shuffling : No**Is Question Mandatory : No****Correct Marks : 4 Wrong Marks : 1**

Given below are two statements-

Statement I: Activated charcoal is used in culture medium to avoid the toxic effect of oxidation of phenols secreted by certain plant tissues.

Statement II: The explants are sterilized by treating calcium hypochlorite.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937345. 1

19088937346. 2

19088937347. 3

19088937348. 4

Question Number : 103 Question Id : 1908899364 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Ethylene enhances the rate of leaf senescence.

Reason R : Enhanced ethylene production is associated with chlorophyll loss and color fading, which are characteristic features of leaf and flower senescence.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937349. 1

19088937350. 2

19088937351. 3

Question Number : 104 Question Id : 1908899365 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Several EREBPs (ERE-binding protein) are rapidly up-regulated in response to ethylene.

Statement II: ERF1 encodes a protein that belongs to the EREBP family of transcription factors, which were first identified in tobacco as proteins that bind to ERE sequences.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937353. 1

19088937354. 2

19088937355. 3

19088937356. 4

Question Number : 105 Question Id : 1908899366 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In which of the following crops shoot senescence is observed?

1. Rice
2. Wheat
3. Mustard
4. Banana

Options :

19088937357. 1

19088937358. 2

19088937359. 3

19088937360. 4

**Question Number : 106 Question Id : 1908899367 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: All fruits that ripe in response to ethylene exhibit a characteristic respiratory rise before the ripening phase are called climacteric fruits.

Statement II: Watermelon is an example of climacteric fruits.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937361. 1

19088937362. 2

19088937363. 3

19088937364. 4

**Question Number : 107 Question Id : 1908899368 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Match **List I** with **List II**

List I (Dwarfing root stocks)	(Fruit crops)
A. M ₉	I. Pear
B. Quince C	II. Cheery
C. <i>P. besseyi</i>	III. Apple
D. Colt	IV. Apricot

Choose the *correct* answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - III, B - I, C - IV, D - II
3. A - II, B - I, C - IV, D - III
4. A - II, B - IV, C - I, D - III

Options :

19088937365. 1

19088937366. 2

19088937367. 3

19088937368. 4

Question Number : 108 Question Id : 1908899369 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Scald is a post-harvest disorder in apples that appears after about 3 months of storage.

Statement II: Treatment with methylcyclopropene (1-MCP) reduces scald disorder as well as maintaining fruit firmness and acidity in apples.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937369. 1

19088937370. 2

19088937371. 3

19088937372. 4

Question Number : 109 Question Id : 1908899370 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is a climacteric fruit?

1. Ber
2. Sapota
3. Cherry
4. Fig

Options :

19088937373. 1

19088937374. 2

19088937375. 3

19088937376. 4

Question Number : 110 Question Id : 1908899371 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Pineapple is an example of short day plant.

Statement II: Citrus is an example of day neutral plant.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937377. 1

19088937378. 2

19088937379. 3

19088937380. 4

Question Number : 111 Question Id : 1908899372 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who gave the term 'florigen'?

1. Lysenko
2. Lang and Melcher
3. Chailakhyan
4. Garner and Allard

Options :

19088937381. 1

19088937382. 2

19088937383. 3

19088937384. 4

Question Number : 112 Question Id : 1908899373 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I (Species)	List II (Length of juvenile period)
A. Rose (<i>Rosa</i> [hybrid tea])	I. 1 year
B. Grape (<i>Vitis</i> spp.)	II. 5 – 8 years
C. Apple (<i>Malus</i> spp.)	III. 20 – 30 days
D. <i>Citrus</i> spp.	IV. 4 – 8 years

Choose the *correct* answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - III, B - I, C - IV, D - II
3. A - II, B - I, C - IV, D - III
4. A - II, B - IV, C - I, D - III

Options :

19088937385. 1

19088937386. 2

19088937387. 3

19088937388. 4

Question Number : 113 Question Id : 1908899374 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Name the model for floral organ specification, in which a particular gene or pair of genes is associated with each developmental field, but controls the identity of two adjacent whorls of organs.

1. FLW model
2. FWR model
3. FLO model
4. ABC model

Options :

19088937389. 1

19088937390. 2

19088937391. 3

19088937392. 4

Question Number : 114 Question Id : 1908899375 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: In some species, a structure other than the ovary wall develops as the fruit, known as pseudocarpic fruits.

Statement II: A strawberry is an example of pseudocarpic fruits.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937393. 1

19088937394. 2

19088937395. 3

19088937396. 4

Question Number : 115 Question Id : 1908899376 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Gibberellins promote seed germination.

Reason R : Gibberellins stimulate the production of numerous hydrolases, notably α -amylase, by the aleurone layers of germinating cereal grains.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937397. 1

19088937398. 2

19088937399. 3

19088937400. 4

Question Number : 116 Question Id : 1908899377 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match **List I** with **List II**

List I (Compounds in seed)	List II (Example)
A. Glutelin	I. Lettuce
B. Coumarin	II. Guar
C. Caffeine	III. Wheat
D. Galactomannan	IV. Coffee

Choose the *correct* answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - III, B - I, C - IV, D - II
3. A - II, B - I, C - IV, D - III
4. A - II, B - IV, C - I, D - III

Options :

19088937401. 1

19088937402. 2

19088937403. 3

19088937404. 4

Question Number : 117 Question Id : 1908899378 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Physiological dormancy is often referred to as embryo dormancy.

Reason R : The presence of growth inhibitors, a deficiency of growth promoting substance or a lack of proper balance between two hormones has been postulated as the factor causing embryo dormancy.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

Options :

19088937405. 1

19088937406. 2

19088937407. 3

19088937408. 4

Question Number : 118 Question Id : 1908899379 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I (Radiation)	List II (Wavelength range)
A. UV A	I. 100 – 280 nm
B. UV B	II. 320 – 400 nm
C. UV C	III. 400 – 425 nm
D. Violet	IV. 280 – 320 nm

Choose the *correct* answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - III, B - I, C - IV, D - II
3. A - II, B - I, C - IV, D - III
4. A - II, B - IV, C - I, D - III

Options :

19088937409. 1

19088937410. 2

19088937411. 3

19088937412. 4

Question Number : 119 Question Id : 1908899380 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: The production of reactive oxygen species (ROS) in chloroplast and mitochondria can be reduced by enzymes called alternative oxidases (AOX).

Statement II: Production of ROS can be both beneficial and harmful to the plant cell and its level must be precisely regulated at the cellular level.

In light of the above statements, choose the *correct* answer from the options given below:

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088937413. 1

19088937414. 2

19088937415. 3

19088937416. 4

Question Number : 120 Question Id : 1908899381 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In which atmospheric layer, 'ozone layer' is located?

1. Ionosphere
2. Thermosphere
3. Stratosphere
4. Mesosphere

Options :

19088937417. 1

19088937418. 2

19088937419. 3

19088937420. 4