

National Testing Agency

Question Paper Name :	Plant Biochemistry 17th September Shift 2
Subject Name :	Plant Biochemistry
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Plant Biochemistry

Group Number :	1
Group Id :	19088982
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 :	190889170
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory

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 :	190889210
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 1908899142 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 :

19088936461. 1
19088936462. 2
19088936463. 3
19088936464. 4

Question Number : 2 Question Id : 1908899143 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 :

- 19088936465. 1
- 19088936466. 2
- 19088936467. 3
- 19088936468. 4

Question Number : 3 Question Id : 1908899144 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 :

- 19088936469. 1
- 19088936470. 2
- 19088936471. 3
- 19088936472. 4

Question Number : 4 Question Id : 1908899145 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 :

- 19088936473. 1
- 19088936474. 2

19088936476. 4

Question Number : 5 Question Id : 1908899146 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 :

19088936477. 1

19088936478. 2

19088936479. 3

19088936480. 4

Question Number : 6 Question Id : 1908899147 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 :

19088936481. 1

19088936482. 2

19088936483. 3

19088936484. 4

Question Number : 7 Question Id : 1908899148 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 :

19088936485. 1

19088936486. 2

19088936487. 3

19088936488. 4

Question Number : 8 Question Id : 1908899149 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 :

19088936489. 1

19088936490. 2

19088936491. 3

19088936492. 4

Question Number : 9 Question Id : 1908899150 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 :

19088936493. 1

19088936494. 2

19088936495. 3

19088936496. 4

Question Number : 10 Question Id : 1908899151 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 :

19088936497. 1

19088936498. 2

19088936499. 3

19088936500. 4

Question Number : 11 Question Id : 1908899152 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 :

19088936501. 1

19088936502. 2

19088936503. 3

19088936504. 4

Question Number : 12 Question Id : 1908899153 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 :

19088936505. 1

19088936506. 2

19088936507. 3

19088936508. 4

Question Number : 13 Question Id : 1908899154 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 :

19088936509. 1

19088936510. 2

19088936511. 3

19088936512. 4

Question Number : 14 Question Id : 1908899155 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 :

19088936513. 1

19088936514. 2

19088936515. 3

19088936516. 4

Question Number : 15 Question Id : 1908899156 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 :

19088936517. 1

19088936518. 2

19088936519. 3

19088936520. 4

Question Number : 16 Question Id : 1908899157 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 :

19088936521. 1

19088936522. 2

19088936523. 3

19088936524. 4

Question Number : 17 Question Id : 1908899158 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 :

19088936525. 1

19088936526. 2

19088936527. 3

19088936528. 4

Question Number : 18 Question Id : 1908899159 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 :

19088936529. 1

19088936530. 2

19088936531. 3

19088936532. 4

Question Number : 19 Question Id : 1908899160 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 :

19088936533. 1

19088936534. 2

19088936535. 3

19088936536. 4

Question Number : 20 Question Id : 1908899161 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 :

19088936537. 1

19088936538. 2

19088936539. 3

19088936540. 4

Part B Core : Crop Sciences-III

Section Id : 190889171

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 :	190889211
Question Shuffling Allowed :	Yes

Question Number : 21 Question Id : 1908899162 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 :

19088936541. 1

19088936542. 2

19088936543. 3

19088936544. 4

Question Number : 22 Question Id : 1908899163 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

19088936545. 1

19088936546. 2

19088936547. 3

19088936548. 4

Question Number : 23 Question Id : 1908899164 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 :

19088936549. 1

19088936550. 2

19088936551. 3

19088936552. 4

Question Number : 24 Question Id : 1908899165 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 :

19088936553. 1

19088936554. 2

19088936555. 3

19088936556. 4

Question Number : 25 Question Id : 1908899166 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 :

19088936557. 1

19088936558. 2

19088936559. 3

19088936560. 4

Question Number : 26 Question Id : 1908899167 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 :

19088936561. 1

19088936562. 2

19088936563. 3

19088936564. 4

Question Number : 27 Question Id : 1908899168 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 :

19088936565. 1

19088936566. 2

19088936567. 3

19088936568. 4

Question Number : 28 Question Id : 1908899169 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 :

19088936569. 1

19088936570. 2

19088936571. 3

19088936572. 4

Question Number : 29 Question Id : 1908899170 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 :

19088936573. 1

19088936574. 2

19088936575. 3

19088936576. 4

Question Number : 30 Question Id : 1908899171 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 :

19088936577. 1

19088936578. 2

19088936579. 3

19088936580. 4

Question Number : 31 Question Id : 1908899172 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 :

19088936581. 1

19088936582. 2

19088936583. 3

19088936584. 4

Question Number : 32 Question Id : 1908899173 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088936585. 1
- 19088936586. 2
- 19088936587. 3
- 19088936588. 4

Question Number : 33 Question Id : 1908899174 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 :

- 19088936589. 1
- 19088936590. 2
- 19088936591. 3
- 19088936592. 4

Question Number : 34 Question Id : 1908899175 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 :

19088936593. 1

19088936594. 2

19088936595. 3

19088936596. 4

Question Number : 35 Question Id : 1908899176 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 :

19088936597. 1

19088936598. 2

19088936599. 3

19088936600. 4

Question Number : 36 Question Id : 1908899177 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 :

19088936601. 1

19088936602. 2

19088936603. 3

19088936604. 4

Question Number : 37 Question Id : 1908899178 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 :

- 19088936605. 1
- 19088936606. 2
- 19088936607. 3
- 19088936608. 4

Question Number : 38 Question Id : 1908899179 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 :

- 19088936609. 1
- 19088936610. 2
- 19088936611. 3
- 19088936612. 4

Question Number : 39 Question Id : 1908899180 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 :

19088936613. 1

19088936614. 2

19088936615. 3

19088936616. 4

Question Number : 40 Question Id : 1908899181 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 :

19088936617. 1

19088936618. 2

19088936619. 3

19088936620. 4

Question Number : 41 Question Id : 1908899182 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 :

19088936621. 1

19088936622. 2

19088936623. 3

19088936624. 4

Question Number : 42 Question Id : 1908899183 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 :

19088936625. 1

19088936626. 2

19088936627. 3

19088936628. 4

Question Number : 43 Question Id : 1908899184 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 :

19088936629. 1

19088936630. 2

19088936631. 3

19088936632. 4

Question Number : 44 Question Id : 1908899185 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 :

19088936633. 1

19088936634. 2

19088936635. 3

19088936636. 4

Question Number : 45 Question Id : 1908899186 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088936637. 1
- 19088936638. 2
- 19088936639. 3
- 19088936640. 4

Question Number : 46 Question Id : 1908899187 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 :

- 19088936641. 1
- 19088936642. 2
- 19088936643. 3
- 19088936644. 4

Question Number : 47 Question Id : 1908899188 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 :

19088936645. 1

19088936646. 2

19088936647. 3

19088936648. 4

Question Number : 48 Question Id : 1908899189 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 :

19088936649. 1

19088936650. 2

19088936651. 3

19088936652. 4

Question Number : 49 Question Id : 1908899190 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 :

19088936653. 1

19088936654. 2

19088936655. 3

19088936656. 4

Question Number : 50 Question Id : 1908899191 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 :

19088936657. 1

19088936658. 2

19088936659. 3

19088936660. 4

Question Number : 51 Question Id : 1908899192 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 :

19088936661. 1

19088936662. 2

19088936663. 3

19088936664. 4

Question Number : 52 Question Id : 1908899193 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 :

19088936665. 1

19088936666. 2

19088936667. 3

19088936668. 4

Question Number : 53 Question Id : 1908899194 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 :

19088936670. 2

19088936671. 3

19088936672. 4

Question Number : 54 Question Id : 1908899195 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 :

19088936673. 1

19088936674. 2

19088936675. 3

19088936676. 4

Question Number : 55 Question Id : 1908899196 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

19088936677. 1

19088936678. 2

19088936679. 3

19088936680. 4

Question Number : 56 Question Id : 1908899197 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 :

19088936681. 1

19088936682. 2

19088936683. 3

19088936684. 4

Question Number : 57 Question Id : 1908899198 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 :

- 19088936685. 1
- 19088936686. 2
- 19088936687. 3
- 19088936688. 4

Question Number : 58 Question Id : 1908899199 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 :

- 19088936689. 1
- 19088936690. 2
- 19088936691. 3
- 19088936692. 4

Question Number : 59 Question Id : 1908899200 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 :

19088936693. 1

19088936694. 2

19088936695. 3

19088936696. 4

Question Number : 60 Question Id : 1908899201 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 :

19088936698. 2

19088936699. 3

19088936700. 4

Question Number : 61 Question Id : 1908899202 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 :

19088936701. 1

19088936702. 2

19088936703. 3

19088936704. 4

Question Number : 62 Question Id : 1908899203 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 :

19088936705. 1

19088936706. 2

19088936707. 3

19088936708. 4

Question Number : 63 Question Id : 1908899204 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 :

19088936709. 1

19088936710. 2

19088936711. 3

19088936712. 4

Question Number : 64 Question Id : 1908899205 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 :

19088936713. 1

19088936714. 2

19088936715. 3

19088936716. 4

Question Number : 65 Question Id : 1908899206 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 :

19088936717. 1

19088936718. 2

19088936719. 3

19088936720. 4

Question Number : 66 Question Id : 1908899207 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 :

19088936721. 1

19088936722. 2

19088936723. 3

19088936724. 4

Question Number : 67 Question Id : 1908899208 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

19088936725. 1

19088936726. 2

19088936727. 3

19088936728. 4

Question Number : 68 Question Id : 1908899209 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 :

19088936729. 1

19088936730. 2

19088936731. 3

19088936732. 4

Question Number : 69 Question Id : 1908899210 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 :

19088936733. 1

19088936734. 2

19088936735. 3

19088936736. 4

Question Number : 70 Question Id : 1908899211 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 :

19088936737. 1

19088936738. 2

19088936739. 3

19088936740. 4

Part C : Plant Biochemistry

Section Id :	190889172
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 :	190889212
Question Shuffling Allowed :	Yes

Question Number : 71 Question Id : 1908899212 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The three-dimensional structure of the reaction centers of purple bacteria was deduced by-

1. Topology
2. Microscopy
3. X-ray crystallography
4. NMR spectroscopy

Options :

19088936741. 1

19088936742. 2

19088936743. 3

19088936744. 4

Question Number : 72 Question Id : 1908899213 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is a carbohydrate with six carbon atoms?

1. Glyceraldehyde
2. Talose
3. Xylulose
4. Dihydroxyacetone

Options :

19088936745. 1

19088936746. 2

19088936747. 3

19088936748. 4

Question Number : 73 Question Id : 1908899214 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: When ΔG of reaction is negative, the reaction is endergonic and goes in the reverse direction.

Statement II: When ΔG of reaction is positive, the reaction is endergonic and tends to go towards completion.

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 :

19088936749. 1

19088936750. 2

19088936751. 3

19088936752. 4

Question Number : 74 Question Id : 1908899215 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Plasma membrane is composed of lipid, protein and carbohydrate molecules.

Statement II: Cytoplasm is an aqueous solution, whereas cytosol contains enzymes, RNA molecules and co-enzymes.

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 :

19088936753. 1

19088936754. 2

19088936755. 3

19088936756. 4

Question Number : 75 Question Id : 1908899216 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are five statements about pH-

A. The stronger the base, lower its pKa.

B. The stronger the acid, lower its pKa.

C. Protonated amino acids, carboxyl group of amino acid and phosphate group of nucleotides, are weak acids.

D. Protonated amino acids, carboxyl group of amino acid and phosphate group of nucleotides, are weak bases.

E. Cells maintain specific cytosolic pH and biomolecules in ionic state near pH7.

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

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

Options :

19088936757. 1

19088936758. 2

19088936759. 3

19088936760. 4

Question Number : 76 Question Id : 1908899217 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following inorganic element serves as a cofactor for the enzyme urease?

1. Mn^{2+}
2. Se^{2+}
3. K^+
4. Ni^{2+}

Options :

19088936761. 1

19088936762. 2

19088936763. 3

Question Number : 77 Question Id : 1908899218 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Fischer projection of Glyceraldehyde depicts horizontal bonds projecting out of the plane of the paper towards the reader, whereas vertical bonds behind the plane of paper, away from the reader.

Statement II: Fischer projection of Glyceraldehyde depicts vertical bonds projecting out of the plane towards the reader, whereas, horizontal bonds away from the reader.

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 :

19088936765. 1

19088936766. 2

19088936767. 3

19088936768. 4

Question Number : 78 Question Id : 1908899219 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 : Aldohexoses exist in a cyclic form or five-membered ring.

Reason R : Aldohexoses have their resemblance with furan.

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 :

19088936769. 1

19088936770. 2

19088936771. 3

19088936772. 4

Question Number : 79 Question Id : 1908899220 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 monosaccharides except dihydroxyacetone contain one or more asymmetric (chiral) carbon atoms.

Reason R : Monosaccharides exist as optically active isomeric forms.

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 :

19088936773. 1

19088936774. 2

19088936775. 3

Question Number : 80 Question Id : 1908899221 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following statements-

- A. Intermediates formed during synthesis of carbohydrates are mostly phosphorylated derivatives of sugars.
- B. Condensation of phosphoric acid with one of the hydroxyl groups of sugar forms phosphate ester.
- C. Sugar phosphates are stable at alkaline pH and carry a positive charge.
- D. Sugar phosphates are stable at neutral pH and carry no charge.
- E. Sugar phosphates are stable at neutral pH and carry a negative charge.

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

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

Options :

19088936777. 1

19088936778. 2

19088936779. 3

19088936780. 4

Question Number : 81 Question Id : 1908899222 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following compound(s) is/are used to label and identify the N-terminal amino acid of protein primary structure?

1. Sodium dodecyl sulphate
2. β -mercaptoethanol and polyvinylpyrrolidone
3. 1-fluoro-2,4-dinitrobenzene
4. Coomassie blue and its derivatives

Options :

19088936781. 1

19088936782. 2

19088936783. 3

19088936784. 4

Question Number : 82 Question Id : 1908899223 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Catalytic power of enzymes is derived from the free energy of weak bonds and interactions between enzyme and substrate.

Statement II: Interaction in the reactions are optimized in transition state.

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 :

19088936785. 1

19088936786. 2

19088936787. 3

19088936788. 4

Question Number : 83 Question Id : 1908899224 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 (Substrates)
A. Hexokinase	I. N-Benzoyltyrosinamide
B. β -Galactosidase	II. ATP
C. Carbonic anhydrase	III. D-Lactose
D. Chymotrypsin	IV. HCO_3^-

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

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

Options :

19088936789. 1

19088936790. 2

19088936791. 3

19088936792. 4

Question Number : 84 Question Id : 1908899225 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are five statements-

- A. Vitamin D₃ is not biologically active.
- B. Vitamin D₃ is normally formed in the skin from chylomicrons and low density lipoproteins.
- C. 1,25-dihydroxycholecalciferol is an organic compound which regulates calcium levels.
- D. Vitamin D₃ is converted to 1,25-dihydroxycholecalciferol in liver and kidney.
- E. Deficiency of vitamin D causes defective bone formation.

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

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

Options :

19088936793. 1

19088936794. 2

19088936795. 3

19088936796. 4

Question Number : 85 Question Id : 1908899226 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is the site of action for peptide, amine and eicosanoid hormones?

- 1. Outside the target cell in plasma membrane
- 2. Inside the target cell in plasma membrane
- 3. Outside the target cell in mitochondria
- 4. Inside the target cell in mitochondria

Options :

19088936797. 1

19088936798. 2

19088936799. 3

19088936800. 4

Question Number : 86 Question Id : 1908899227 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Enzymes enhance the reaction rates by which of the following factor?

1. 10^3 to 10^{15}
2. 10^5 to 10^{17}
3. 10^4 to 10^{17}
4. 10^6 to 10^{15}

Options :

19088936801. 1

19088936802. 2

19088936803. 3

19088936804. 4

Question Number : 87 Question Id : 1908899228 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which is substrate of catalase enzyme ?

1. ATP
2. Acetylcholine
3. H_2O_2
4. Fumarate

Options :

19088936805. 1

19088936806. 2

19088936807. 3

19088936808. 4

Question Number : 88 Question Id : 1908899229 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 : Mitochondria are one of the targets of active caspase 8 during apoptosis.

Reason R : Protease causes release of certain proteins between the inner and outer mitochondrial membranes.

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 :

19088936809. 1

19088936810. 2

19088936811. 3

19088936812. 4

Question Number : 89 Question Id : 1908899230 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Tumor suppresses genes that encode regulatory proteins and inhibit cell division.

Statement II: Mutations in suppressor genes cannot lead to tumor formation.

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 :

19088936813. 1

19088936814. 2

Question Number : 90 Question Id : 1908899231 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following statements about the transcription initiation-

- A. Activators retard the RNA polymerase promoter interaction.
- B. Specificity factors alter the specificity of RNA polymerase for a given promoter or set of promoters.
- C. The sequences of eukaryotic promoters are more variable than prokaryotic counterparts.
- D. Repressor slows down the DNA polymerase to promoter.

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 :

19088936817. 1

19088936818. 2

19088936819. 3

19088936820. 4

Question Number : 91 Question Id : 1908899232 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which statement is true regarding light absorption by a mixture of protein and nucleic acid?

- 1. Proteins absorbs more strongly at 270nm and nucleic acid at 260nm.
- 2. Proteins absorbs more strongly at 280nm and nucleic acid at 260nm.
- 3. Nucleic acid absorbs more strongly at 240nm and proteins at 270nm.
- 4. Nucleic acid absorbs more strongly at 280nm and proteins at 240nm.

Options :

19088936822. 2

19088936823. 3

19088936824. 4

Question Number : 92 Question Id : 1908899233 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following statements about nitrogen cycle-

- A. Nitrogen cycle entails formation of ammonia by bacterial fixation of nitrogen.
- B. Nitrification of ammonia to nitrate is due to soil organisms.
- C. Nitrite is converted to ammonia.
- D. Conversion of nitrate to nitrite occurs by denitrifying bacteria.

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 :

19088936825. 1

19088936826. 2

19088936827. 3

19088936828. 4

Question Number : 93 Question Id : 1908899234 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 : Electric field application to gel results in negatively charged DNA migrating towards the anode.

Reason R : Larger molecules migrate more slowly than the smaller molecules.

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 :

19088936829. 1

19088936830. 2

19088936831. 3

19088936832. 4

Question Number : 94 Question Id : 1908899235 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 : Size exclusion chromatography separates proteins according to their size.

Reason R : Size exclusion chromatography separates proteins wherein small proteins come out first.

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 :

19088936833. 1

19088936834. 2

19088936835. 3

19088936836. 4

Question Number : 95 Question Id : 1908899236 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following statements about DNA microarray-

- A. DNA microarray allows slow and simultaneous screening of multiple genes at a time.
- B. Genes of known sequences are amplified by PCR using robotic devices.
- C. Photolithography is an alternative strategy to synthesize DNA directly.
- D. DNA segments from unknown genes are amplified by PCR.

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

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

Options :

19088936837. 1

19088936838. 2

19088936839. 3

19088936840. 4

Question Number : 96 Question Id : 1908899237 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which among the following is true about wheat proteins?

1. Gluten is composed of gliadin and glutenin fractions
2. Glutenin is composed of gliadin and gluten fractions
3. Gliadin is composed of gluten and glutenin fractions
4. Glutenin is composed of gluten fraction only

Options :

19088936841. 1

19088936842. 2

19088936843. 3

19088936844. 4

Question Number : 97 Question Id : 1908899238 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Hordein is the major storage protein of barley, which has been classified into four different groups of polypeptides; A, B, C and D hordeins.

Statement II: All four hordeins contain similar amino acid composition, though they differ in their molecular weight.

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 :

19088936845. 1

19088936846. 2

19088936847. 3

19088936848. 4

Question Number : 98 Question Id : 1908899239 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Most of the plasma cholesterol exists in which of the following form of lipoprotein?

1. High-density lipoproteins (HDL)
2. Low-density lipoproteins (LDL)
3. Very low-density lipoproteins (VLDL)
4. 1:1 ratio of LDL and VLDL

Options :

19088936849. 1

19088936850. 2

19088936851. 3

19088936852. 4

Question Number : 99 Question Id : 1908899240 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 : Cereals are usually deficient in Lysine and tryptophan.

Reason R : Prolamines account for 30-60% of total grain protein in almost all cereals except few.

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 :

19088936853. 1

19088936854. 2

19088936855. 3

19088936856. 4

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Lathyrogens, which affect the central nervous system are heat-labile anti-nutritional factors.

Statement II: Anti-vitamins are another kind of heat-labile anti-nutritional factors, the activity of which can be eliminated by heat treatment.

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 :

19088936857. 1

19088936858. 2

19088936859. 3

19088936860. 4

Question Number : 101 Question Id : 1908899242 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 : Chlorophylls are the key light absorbing pigments in plants, showing strong absorption in visible region of spectrum.

Reason R : Chlorophyll has an extended polyene structure with alternating single and double bonds.

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

19088936861. 1

19088936862. 2

19088936863. 3

19088936864. 4

Question Number : 102 Question Id : 1908899243 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Cyanobacteria can synthesize ATP only by photophosphorylation.

Statement II: Cyanobacteria use both Cyt b_6f and Cyt c_6 for proton pumping during photophosphorylation.

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 :

19088936865. 1

19088936866. 2

19088936867. 3

19088936868. 4

Question Number : 103 Question Id : 1908899244 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following conversion occurs in xanthophyll cycle in plants?

1. Violoxanthin to zeaxanthin
2. β -carotene to phytoene
3. zeaxanthin to β -carotene
4. zeaxanthin to phytoene

Options :

19088936869. 1

19088936870. 2

19088936871. 3

19088936872. 4

Question Number : 104 Question Id : 1908899245 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

As per Chemiosmotic coupling model, the main energetic driving force for synthesis of ATP is an ion gradient across a selectively permeable biological membrane in-

1. Mitochondria only
2. Chloroplast only
3. Endoplasmic reticulum
4. Mitochondria and chloroplast both

Options :

19088936873. 1

19088936874. 2

19088936875. 3

19088936876. 4

Question Number : 105 Question Id : 1908899246 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following statements-

- A. C_4 pathway increases the CO_2 concentration in the bundle sheath cells.
- B. C_4 pathway begins in bundle sheath cells, where PEP carboxylase converts PEP to oxaloacetate.
- C. In CAM plants, activation and deactivation of PEP carboxylase are mediated by endogenous circadian rhythms rather than exogenous light and dark signals.
- D. Both C_3 and C_4 pathways have the same energy cost in terms of the number of ATP and NADPH required.
- E. C_2 cycle converts two molecules of phosphoglycolate to one CO_2 and one 3-PGA.

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

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

Options :

19088936877. 1

19088936878. 2

19088936879. 3

19088936880. 4

Question Number : 106 Question Id : 1908899247 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following enzyme contains 'Siroheme', an unusual heme having Soret band of low wavelength?

- 1. Nitrite reductase (NiR)
- 2. Nitrogenase
- 3. Nitrate reductase (NR)
- 4. Glutamine synthetase

Options :

19088936881. 1

19088936882. 2

Question Number : 107 Question Id : 1908899248 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Glucosinolates become biologically active only in response to tissue damage by the activity of enzyme myrosinase.

Statement II: In healthy plants, sub-cellular compartmentalization separates myrosinase from glucosinolate substrate.

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 :

19088936885. 1

19088936886. 2

19088936887. 3

19088936888. 4

Question Number : 108 Question Id : 1908899249 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is NOT the correct statement?

1. Legume-*Rhizobium* symbiotic system/association is more efficient than free-living N₂-fixers.
2. Ureides such as allantoin and allantoic acid are used for nitrogen transport in several legumes.
3. Mo is required for Nitrate reductase activity but not for Nitrogenase activity.
4. Nodules emerge in same position as the lateral root and contain approximately equal amount of root and bacterial mass.

Options :

19088936889. 1

19088936890. 2

19088936891. 3

19088936892. 4

Question Number : 109 Question Id : 1908899250 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: The uptake hydrogenase enzyme is produced by *Rhizobium* spp. and is present in all the strains of *Rhizobia*.

Statement II: Uptake hydrogenase is different from other classical hydrogenases, as uptake hydrogenase catalyzes the irreversible oxidation of H_2 .

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 :

19088936893. 1

19088936894. 2

19088936895. 3

19088936896. 4

Question Number : 110 Question Id : 1908899251 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 : Selectins, a family of lectins, mediate the flow of information between cell and matrix or between the cells.

Reason R : Selectins, that bind carbohydrate with high affinity are always present inside the cells.

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 :

19088936897. 1

19088936898. 2

19088936899. 3

19088936900. 4

Question Number : 111 Question Id : 1908899252 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is an example of Na^+/K^+ ATPase of the plasma membrane?

1. F-Type ATPase
2. V-Type ATPase
3. P-Type ATPase
4. Ionophore

Options :

19088936901. 1

19088936902. 2

19088936903. 3

19088936904. 4

Question Number : 112 Question Id : 1908899253 Question Type : MCQ Option Shuffling : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Mitochondrial genes are transcribed and translated within mitochondria only.

Statement II: Introns are always absent in mitochondrial genome.

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 :

19088936905. 1

19088936906. 2

19088936907. 3

19088936908. 4

Question Number : 113 Question Id : 1908899254 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: Most of the protein-coding genes almost never occur in multiple copies, except few.

Reason R: mRNA transcripts undergo repeated translation to provide an adequate amount of most proteins.

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 :

19088936909. 1

19088936910. 2

19088936911. 3

19088936912. 4

**Question Number : 114 Question Id : 1908899255 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Which of the following is true about iTRAQ?

1. It is a method for quantitative analysis of nucleic acid mixtures.
2. It makes use of isobaric reagents in its protocol.
3. It is an acronym for 'Isotopic Tag for Relative and Absolute Quantitation'.
4. It is a method for qualitative analysis of nucleic acid mixtures.

Options :

19088936913. 1

19088936914. 2

19088936915. 3

19088936916. 4

**Question Number : 115 Question Id : 1908899256 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Read the following statements-

- A. G-protein coupled receptors (GPCRs) undergo conformational changes, when a hormone/ligand binds.
- B. One hormone can activate only one signal transduction pathway to elicit an intracellular response.
- C. Inositol triphosphate (IP₃) which triggers Ca²⁺ release is a water-insoluble second messenger.
- D. Diacylglycerol (DAG) is a lipid-soluble second messenger that activates protein kinase C.
- E. Insulin receptor is a type of receptor-tyrosine kinase.

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

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

Options :

19088936917. 1

19088936918. 2

19088936919. 3

19088936920. 4

Question Number : 116 Question Id : 1908899257 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Biodegradable plastics can be produced in plants by metabolic engineering.

Statement II: Polyhydroxyalkanoates (PHA), a kind of granules of biodegradable plastic are derived from acetyl Co-A.

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 :

19088936921. 1

19088936922. 2

19088936923. 3

19088936924. 4

Question Number : 117 Question Id : 1908899258 Question Type : MCQ Option Shuffling : No**Is Question Mandatory : No****Correct Marks : 4 Wrong Marks : 1****Match List I with List II**

List I (Vectors)	List II (Insert Size)
A. Plasmids	I. < 300 kb
B. BAC (Bacterial Artificial Chromosome) vectors	II. upto 25 kb
C. YAC (Yeast Artificial Chromosome) vectors	III. upto 5 kb
D. Phage λ vectors	IV. upto 2000 kb

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

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

Options :

19088936925. 1

19088936926. 2

19088936927. 3

19088936928. 4

Question Number : 118 Question Id : 1908899259 Question Type : MCQ Option Shuffling : No**Is Question Mandatory : No****Correct Marks : 4 Wrong Marks : 1**

Which one among the following is NOT true about primary cultures?

1. Primary cultures are directly derived from the tissues or tissue fragments.
2. Primary cultures may produce heterogenous population of cells.
3. Primary cultures have infinite life span.
4. Primary cultures retain their characteristics and reflect true activity of cell type *in vivo*.

Options :

19088936929. 1

19088936930. 2

19088936931. 3

19088936932. 4

Question Number : 119 Question Id : 1908899260 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Onset of stress proteins that facilitate protein folding or protect the proteins from misfolding and aggregation is one of the major responses to any environmental stress.

Statement II: Protein dynamics *i.e.* interconversion of folding states of protein, can be understood with NMR studies by characterizing the protein conformation, but not at the level of individual amino acid residues.

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 :

19088936933. 1

19088936934. 2

19088936935. 3

19088936936. 4

Question Number : 120 Question Id : 1908899261 Question Type : MCQ Option Shuffling : No

Correct Marks : 4 Wrong Marks : 1

Most countries across the globe have recognized 'PCT', under which filing a single patent application in one signatory country gives protection in remainder. PCT stands for-

1. Patent Co-opt Treaty
2. Patent Co-existence Treaty
3. Patent Co-operative Treaty
4. Patent Co-operation Treaty

Options :

19088936937. 1

19088936938. 2

19088936939. 3

19088936940. 4