

National Testing Agency

Question Paper Name :	Agricultural Biotechnology or Biotechnology 17th September Shift 2
Subject Name :	Agricultural Biotechnology or Biotechnology or Molecular Biology and Biotechnology
Creation Date :	2021-09-17 18:54:23
Duration :	120
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Display Marks:	Yes

Agricultural Biotechnology or Biotechnology or Molecular Biology and Biotechnology

Group Number :	1
Group Id :	19088984
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 :	190889176
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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 : 190889216
Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 1908899382 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 :

19088937421. 1

19088937422. 2

19088937423. 3

19088937424. 4

Question Number : 2 Question Id : 1908899383 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 :

19088937425. 1

19088937426. 2

19088937427. 3

19088937428. 4

Question Number : 3 Question Id : 1908899384 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 :

19088937429. 1

19088937430. 2

19088937431. 3

19088937432. 4

Question Number : 4 Question Id : 1908899385 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 :

19088937433. 1

19088937434. 2

19088937435. 3

19088937436. 4

Question Number : 5 Question Id : 1908899386 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 :

19088937437. 1

19088937438. 2

19088937439. 3

19088937440. 4

Question Number : 6 Question Id : 1908899387 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 :

19088937441. 1

19088937442. 2

19088937443. 3

19088937444. 4

Question Number : 7 Question Id : 1908899388 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

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 :

19088937445. 1

19088937446. 2

19088937447. 3

19088937448. 4

Question Number : 8 Question Id : 1908899389 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 :

19088937449. 1

19088937450. 2

19088937451. 3

19088937452. 4

Question Number : 9 Question Id : 1908899390 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 :

19088937453. 1

19088937454. 2

19088937455. 3

19088937456. 4

Question Number : 10 Question Id : 1908899391 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 :

19088937457. 1

19088937458. 2

19088937459. 3

19088937460. 4

Question Number : 11 Question Id : 1908899392 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 :

19088937461. 1

19088937462. 2

19088937463. 3

19088937464. 4

Question Number : 12 Question Id : 1908899393 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 :

19088937465. 1

19088937466. 2

19088937467. 3

19088937468. 4

Question Number : 13 Question Id : 1908899394 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 :

19088937469. 1

19088937470. 2

19088937471. 3

19088937472. 4

Question Number : 14 Question Id : 1908899395 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 :

19088937473. 1

19088937474. 2

19088937475. 3

19088937476. 4

Question Number : 15 Question Id : 1908899396 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 :

19088937477. 1

19088937478. 2

19088937479. 3

19088937480. 4

Question Number : 16 Question Id : 1908899397 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 :

19088937481. 1

19088937482. 2

19088937483. 3

19088937484. 4

Question Number : 17 Question Id : 1908899398 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 :

19088937485. 1

19088937486. 2

19088937487. 3

19088937488. 4

Question Number : 18 Question Id : 1908899399 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 :

19088937489. 1

19088937490. 2

19088937491. 3

19088937492. 4

Question Number : 19 Question Id : 1908899400 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 :

19088937493. 1

19088937494. 2

19088937495. 3

19088937496. 4

Question Number : 20 Question Id : 1908899401 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 :

19088937497. 1

19088937498. 2

19088937499. 3

19088937500. 4

Part B Core : Crop Sciences-III

Section Id :	190889177
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 :	190889217
Question Shuffling Allowed :	Yes

Question Number : 21 Question Id : 1908899402 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 :

19088937501. 1

19088937502. 2

19088937503. 3

19088937504. 4

Question Number : 22 Question Id : 1908899403 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is an example of amino acid containing polar uncharged R group?

1. Alanine
2. Histidine
3. Tryptophan
4. Serine

Options :

19088937505. 1

19088937506. 2

19088937507. 3

19088937508. 4

Question Number : 23 Question Id : 1908899404 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 :

19088937509. 1

19088937510. 2

19088937511. 3

19088937512. 4

Question Number : 24 Question Id : 1908899405 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 :

19088937513. 1

19088937514. 2

19088937515. 3

19088937516. 4

Question Number : 25 Question Id : 1908899406 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 :

19088937517. 1

19088937518. 2

19088937519. 3

19088937520. 4

Question Number : 26 Question Id : 1908899407 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 :

19088937521. 1

19088937522. 2

19088937523. 3

19088937524. 4

Question Number : 27 Question Id : 1908899408 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 :

19088937525. 1

19088937526. 2

19088937527. 3

19088937528. 4

Question Number : 28 Question Id : 1908899409 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 :

19088937529. 1

19088937530. 2

19088937531. 3

19088937532. 4

Question Number : 29 Question Id : 1908899410 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 :

19088937533. 1

19088937534. 2

19088937535. 3

19088937536. 4

Question Number : 30 Question Id : 1908899411 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 :

19088937537. 1

19088937538. 2

19088937539. 3

19088937540. 4

Question Number : 31 Question Id : 1908899412 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 :

19088937541. 1

19088937542. 2

19088937543. 3

19088937544. 4

Question Number : 32 Question Id : 1908899413 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Rho factor is a protein which is involved in the process of transcription.

Statement II: Rho factor induces and enhances the termination efficiency of transcription in eukaryotes.

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 :

19088937545. 1

19088937546. 2

19088937547. 3

19088937548. 4

Question Number : 33 Question Id : 1908899414 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 :

19088937549. 1

19088937550. 2

19088937551. 3

19088937552. 4

Question Number : 34 Question Id : 1908899415 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 :

19088937553. 1

19088937554. 2

19088937555. 3

Question Number : 35 Question Id : 1908899416 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 :

19088937557. 1

19088937558. 2

19088937559. 3

19088937560. 4

Question Number : 36 Question Id : 1908899417 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 :

19088937561. 1

19088937562. 2

19088937563. 3

19088937564. 4

Question Number : 37 Question Id : 1908899418 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 :

19088937565. 1

19088937566. 2

19088937567. 3

19088937568. 4

Question Number : 38 Question Id : 1908899419 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 :

19088937569. 1

19088937570. 2

19088937571. 3

19088937572. 4

Question Number : 39 Question Id : 1908899420 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 :

19088937573. 1

19088937574. 2

19088937575. 3

19088937576. 4

Question Number : 40 Question Id : 1908899421 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 :

19088937577. 1

19088937578. 2

19088937579. 3

19088937580. 4

Question Number : 41 Question Id : 1908899422 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 :

19088937581. 1

19088937582. 2

19088937583. 3

19088937584. 4

Question Number : 42 Question Id : 1908899423 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 :

19088937585. 1

19088937586. 2

19088937587. 3

19088937588. 4

Question Number : 43 Question Id : 1908899424 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 :

19088937589. 1

19088937590. 2

19088937591. 3

19088937592. 4

Question Number : 44 Question Id : 1908899425 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 :

19088937593. 1

19088937594. 2

19088937595. 3

19088937596. 4

Question Number : 45 Question Id : 1908899426 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088937597. 1
- 19088937598. 2
- 19088937599. 3
- 19088937600. 4

Question Number : 46 Question Id : 1908899427 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 :

- 19088937601. 1
- 19088937602. 2
- 19088937603. 3
- 19088937604. 4

Question Number : 47 Question Id : 1908899428 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 :

19088937605. 1

19088937606. 2

19088937607. 3

19088937608. 4

Question Number : 48 Question Id : 1908899429 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 :

19088937609. 1

19088937610. 2

19088937611. 3

19088937612. 4

Question Number : 49 Question Id : 1908899430 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 :

19088937613. 1

19088937614. 2

19088937615. 3

19088937616. 4

Question Number : 50 Question Id : 1908899431 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 :

19088937617. 1

19088937618. 2

19088937619. 3

19088937620. 4

Question Number : 51 Question Id : 1908899432 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 :

19088937621. 1

19088937622. 2

19088937623. 3

19088937624. 4

Question Number : 52 Question Id : 1908899433 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 :

19088937625. 1

19088937626. 2

19088937627. 3

19088937628. 4

Question Number : 53 Question Id : 1908899434 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 :

19088937630. 2

19088937631. 3

19088937632. 4

Question Number : 54 Question Id : 1908899435 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 :

19088937633. 1

19088937634. 2

19088937635. 3

19088937636. 4

Question Number : 55 Question Id : 1908899436 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

19088937637. 1

19088937638. 2

19088937639. 3

19088937640. 4

Question Number : 56 Question Id : 1908899437 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 :

19088937641. 1

19088937642. 2

19088937643. 3

19088937644. 4

Question Number : 57 Question Id : 1908899438 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 :

- 19088937645. 1
- 19088937646. 2
- 19088937647. 3
- 19088937648. 4

Question Number : 58 Question Id : 1908899439 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 :

- 19088937649. 1
- 19088937650. 2
- 19088937651. 3
- 19088937652. 4

Question Number : 59 Question Id : 1908899440 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 :

19088937653. 1

19088937654. 2

19088937655. 3

19088937656. 4

Question Number : 60 Question Id : 1908899441 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 :

19088937658. 2

19088937659. 3

19088937660. 4

Question Number : 61 Question Id : 1908899442 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 :

19088937661. 1

19088937662. 2

19088937663. 3

19088937664. 4

Question Number : 62 Question Id : 1908899443 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 :

19088937665. 1

19088937666. 2

19088937667. 3

19088937668. 4

Question Number : 63 Question Id : 1908899444 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 :

19088937669. 1

19088937670. 2

19088937671. 3

19088937672. 4

Question Number : 64 Question Id : 1908899445 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 :

19088937673. 1

19088937674. 2

19088937675. 3

19088937676. 4

Question Number : 65 Question Id : 1908899446 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 :

19088937677. 1

19088937678. 2

19088937679. 3

19088937680. 4

Question Number : 66 Question Id : 1908899447 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 :

19088937681. 1

19088937682. 2

19088937683. 3

19088937684. 4

Question Number : 67 Question Id : 1908899448 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088937685. 1
- 19088937686. 2
- 19088937687. 3
- 19088937688. 4

Question Number : 68 Question Id : 1908899449 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 :

- 19088937689. 1
- 19088937690. 2
- 19088937691. 3
- 19088937692. 4

Question Number : 69 Question Id : 1908899450 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 :

19088937693. 1

19088937694. 2

19088937695. 3

19088937696. 4

Question Number : 70 Question Id : 1908899451 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 :

19088937697. 1

19088937698. 2

19088937699. 3

19088937700. 4

Part C : Agricultural Biotechnology or Biotechnology or Molecular Biology and Biotechnology

Section Id :	190889178
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 :	190889218
Question Shuffling Allowed :	Yes

Question Number : 71 Question Id : 1908899452 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The smooth endoplasmic reticulum (SER) is the site of

1. Post translational modification
2. Phospholipid biosynthesis
3. Endocytosis
4. Exocytosis

Options :

19088937701. 1

19088937702. 2

19088937703. 3

19088937704. 4

Question Number : 72 Question Id : 1908899453 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following features are true regarding chloroplast genome (plastome)?

- A. Circular, double stranded DNA
- B. Highly conserved among plant species
- C. Size: 120-160 kbp
- D. Categorization on the basis of the presence/absence of Inverted Repeats

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

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

Options :

19088937705. 1

19088937706. 2

19088937707. 3

19088937708. 4

Question Number : 73 Question Id : 1908899454 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Cell cycle progression is controlled by the changes in the activity of -

- 1. Pyruvate kinases
- 2. Cyclin-dependent kinases
- 3. Cyclin-independent kinases
- 4. Ubiquitin-dependent kinases

Options :

19088937709. 1

19088937710. 2

19088937711. 3

19088937712. 4

Question Number : 74 Question Id : 1908899455 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Flow cytometry allows study of cell cycle events.

Statement II: Relative DNA content of individual cells can be measured using flow cytometry.

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 :

19088937713. 1

19088937714. 2

19088937715. 3

19088937716. 4

Question Number : 75 Question Id : 1908899456 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is the net yield of ATP per glucose molecule in glycolysis?

1. Four
2. Two
3. Three
4. Five

Options :

19088937717. 1

19088937718. 2

19088937720. 4

Question Number : 76 Question Id : 1908899457 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following compounds is the precursor of Vitamin D, formed by the action of UV component of sunlight?

1. 7-D-glucose
2. 7-dehydrocholesterol
3. 7-glycolate
4. 7-glycerate

Options :

19088937721. 1

19088937722. 2

19088937723. 3

19088937724. 4

Question Number : 77 Question Id : 1908899458 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: The breakdown of Fatty Acids occurs in the mitochondrial matrix of eukaryotes.

Statement II: Fatty acids are activated by forming thioester link with CoA, before entering the mitochondria.

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 :

19088937725. 1

19088937726. 2

19088937727. 3

19088937728. 4

Question Number : 78 Question Id : 1908899459 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 plant functional molecules?

1. Produced through secondary metabolism
2. Produced in response to environmental changes
3. Counteract Reactive Oxygen Species (ROS)
4. Produced during cell division process

Options :

19088937729. 1

19088937730. 2

19088937731. 3

19088937732. 4

Question Number : 79 Question Id : 1908899460 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who proposed the “lock-and-key” model of enzyme-substrate binding?

1. Eduard Buchner
2. James Sumner
3. Emil Fischer
4. J. B. S. Haldane

Options :

19088937733. 1

19088937734. 2

19088937735. 3

19088937736. 4

Question Number : 80 Question Id : 1908899461 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 : Enzymes are classified into six major groups, based on the type of reaction they catalyze.

Reason R : Each enzyme has a five-digit classification number.

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 :

19088937737. 1

19088937738. 2

19088937739. 3

19088937740. 4

Question Number : 81 Question Id : 1908899462 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

List I (Immobilized Enzyme)	List II (Product)
A. Aminoacylase	I. Lactose-free milk
B. Glucose isomerase	II. Aspartame
C. Thermolysin	III. L-amino acids
D. Lactase	IV. High fructose corn syrup

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

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

Options :

19088937741. 1

19088937742. 2

19088937743. 3

19088937744. 4

Question Number : 82 Question Id : 1908899463 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: On Lineweaver-Burk plot, competitive inhibitor increases K_m but V_{max} remains unchanged.

Statement II: On Lineweaver-Burk plot, non-competitive inhibitor decreases V_{max} but K_m remains unchanged.

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 :

19088937745. 1

19088937746. 2

19088937747. 3

19088937748. 4

Question Number : 83 Question Id : 1908899464 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following histone types are present in nucleosome octamer?

1. H1, H2, H3, H4
2. H2A, H2B, H3, H4
3. H1A, H1B, H2, H3
4. H1, H2A, H2B, H3

Options :

19088937749. 1

19088937750. 2

19088937751. 3

19088937752. 4

Question Number : 84 Question Id : 1908899465 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who among the following was NOT awarded the Nobel Prize for the discovery of the enzyme telomerase and the research into the protective function of telomeres?

1. Elizabeth H Blackburn
2. Carol W Greider
3. Jack W Szostak
4. Willard Boyle

Options :

19088937753. 1

19088937754. 2

19088937755. 3

19088937756. 4

Question Number : 85 Question Id : 1908899466 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Class I transposable elements utilize RNA intermediate during the transposition process.

Statement II: Class II transposable element can utilize both DNA and RNA during the transposition process.

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 :

19088937757. 1

19088937758. 2

19088937759. 3

19088937760. 4

Question Number : 86 Question Id : 1908899467 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

List I (Mutagen type)	List II (Agents)
A. Base analogs	I. X-rays
B. Alkylating agents	II. EMS
C. Ionizing radiation	III. 5-bromouracil
D. Non-ionizing radiation	IV. UV rays

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

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

Options :

19088937761. 1

19088937762. 2

19088937763. 3

19088937764. 4

Question Number : 87 Question Id : 1908899468 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is true regarding the regulation of *trp* operon?

1. Repression only
2. Attenuation only
3. Repression and Attenuation
4. Induction only

Options :

19088937765. 1

19088937766. 2

19088937767. 3

19088937768. 4

Question Number : 88 Question Id : 1908899469 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who discovered the RNA interference as gene silencing by double stranded RNA?

1. Andrew Fire only
2. Craig Mello only
3. Andrew Fire and Craig Mello jointly
4. Aurthur B. McDonald only

Options :

19088937769. 1

19088937770. 2

19088937771. 3

19088937772. 4

Question Number : 89 Question Id : 1908899470 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If the mRNA sequence 5' AUG-UUU-CCC-AAA-GGG 3' is translated, what amino acid sequence will be produced ?

1. Methionine-Phenylalanine-Proline-Lysine-Glycine
2. Methionine-Proline-Phenylalanine-Lysine-Glycine
3. Methionine-Proline-Phenylalanine- Glycine-Lysine
4. Methionine-Phenylalanine-Proline-Lysine-Threonine

Options :

19088937773. 1

19088937774. 2

19088937775. 3

19088937776. 4

Question Number : 90 Question Id : 1908899471 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 : Gene expression can be influenced by the changes in the genome that do not involve mutations in the DNA sequence.

Reason R : Genome changes are affected by DNA methylation pattern.

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 :

19088937777. 1

19088937778. 2

19088937779. 3

19088937780. 4

Question Number : 91 Question Id : 1908899472 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

List I (RNA Polymerase)	List II (Product)
A. RNA Polymerase III Class 2	I. tRNAs
B. RNA Polymerase III Class 1	II. 5S rRNA
C. RNA Polymerase II	III. mRNA
D. RNA Polymerase I	IV. 5.8S rRNA

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

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

Options :

19088937781. 1

19088937782. 2

19088937783. 3

19088937784. 4

Question Number : 92 Question Id : 1908899473 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Based on which property, the two-dimensional polyacrylamide gel electrophoresis (2-D PAGE) technique separates proteins?

1. Charge (pI) only
2. Size only
3. Charge (pI) and size
4. Mass and charge (pI)

Options :

19088937785. 1

19088937786. 2

19088937787. 3

19088937788. 4

Question Number : 93 Question Id : 1908899474 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

List I (Techniques)	List II (Biomolecules)
A. Western Blotting	I. DNA
B. Northern Blotting	II. RNA
C. Southern Blotting	III. DNA-Protein Interaction
D. Foot Printing	IV. Protein

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

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

Options :

19088937789. 1

19088937790. 2

19088937791. 3

19088937792. 4

Question Number : 94 Question Id : 1908899475 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Nanopore sequencing enables direct real-time analysis of DNA fragment.

Statement II: System monitors change in electric current as fragment passes through protein nanopore.

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 :

19088937793. 1

19088937794. 2

19088937795. 3

19088937796. 4

Question Number : 95 Question Id : 1908899476 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

List I (Resources/Softwares)	List II (Details)
A. UniProtKB	I. Multiple Sequence Alignment
B. STRING	II. Protein Knowledgebase
C. ARLEQUIN	III. Protein family and domain database
D. ClustalW	IV. Protein-protein interaction
E. PROSITE	V. Population Genetics Data Analysis

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

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

Options :

19088937797. 1

19088937798. 2

19088937799. 3

19088937800. 4

Question Number : 96 Question Id : 1908899477 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

19088937801. 1

19088937802. 2

19088937803. 3

19088937804. 4

Question Number : 97 Question Id : 1908899478 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Arrange the following steps involved in the end-labeling of a gene probe at the 5' end in proper sequence.

- A. Polynucleotide kinase transfers phosphate group from a donor to the 5' end of the probe
- B. Synthesis of oligonucleotide
- C. Alkaline phosphatase treatment of the probe to remove 5'-phosphate
- D. 5' end of the probe is radiolabelled

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

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

Options :

19088937805. 1

19088937806. 2

19088937807. 3

19088937808. 4

Question Number : 98 Question Id : 1908899479 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who has developed the chain termination method for DNA sequencing?

1. Watson and Crick
2. Maxam and Gilbert
3. Frederick Sanger
4. Meselson and Stahl

Options :

19088937809. 1

19088937810. 2

19088937811. 3

19088937812. 4

Question Number : 99 Question Id : 1908899480 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Group I introns can be converted into true ribozymes by providing free G and IGS complementary sequences.

Statement II: Group I introns release a lariat-shaped intron.

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 :

19088937813. 1

19088937814. 2

19088937815. 3

19088937816. 4

Question Number : 100 Question Id : 1908899481 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which one of the following is a 'linker histone'?

1. H4
2. H3
3. H2A
4. H1

Options :

19088937817. 1

19088937818. 2

19088937819. 3

19088937820. 4

Question Number : 101 Question Id : 1908899482 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following are the functions of RNA?

- A. Repairs the DNA structure.
- B. Acts as an adaptor between the codons in the mRNA and amino acids.
- C. Interferes with the translation of certain mRNAs.
- D. Acts like an enzyme to catalyze essential reactions in the cell.

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

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

Options :

19088937821. 1

19088937822. 2

19088937823. 3

19088937824. 4

Question Number : 102 Question Id : 1908899483 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: DNA polymerase δ has 3'→5' proofreading exonuclease activity.

Statement II: DNA polymerase ϵ synthesizes the lagging strand.

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 :

19088937825. 1

19088937826. 2

19088937827. 3

19088937828. 4

Question Number : 103 Question Id : 1908899484 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

Assertion A: The mismatch repair system is dependent on methylation.

Reason R: MutS is a site-specific endonuclease that acts only on the hemimethylated GATC sequence.

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

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

Options :

19088937829. 1

19088937830. 2

19088937831. 3

19088937832. 4

Question Number : 104 Question Id : 1908899485 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which *PHY* gene encodes a Type I phytochrome?

1. *PHY A*
2. *PHY B*
3. *PHY C*
4. *PHY D*

Options :

19088937833. 1

19088937834. 2

19088937835. 3

19088937836. 4

Question Number : 105 Question Id : 1908899486 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following gene families are involved in auxin-regulated growth and development?

A. AUX/ IAA gene family

B. SAUR gene family

C. CRE1 family

D. GH3 gene family

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

1. A, B, C

2. A, B, D

3. B, C, D

4. A, C, D

Options :

19088937837. 1

19088937838. 2

19088937839. 3

19088937840. 4

Question Number : 106 Question Id : 1908899487 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088937841. 1
- 19088937842. 2
- 19088937843. 3
- 19088937844. 4

Question Number : 107 Question Id : 1908899488 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: *SOS1 (salt overly sensitive1)* gene product functions as a serine/threonine kinase.

Statement II: SOS2 is a calcium-regulated protein phosphatase.

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 :

- 19088937845. 1
- 19088937846. 2
- 19088937847. 3
- 19088937848. 4

Question Number : 108 Question Id : 1908899489 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

19088937849. 1

19088937850. 2

19088937851. 3

19088937852. 4

Question Number : 109 Question Id : 1908899490 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: PEG-induced fusion is enhanced by enriching the PEG solution with Ca^{2+} ions.

Reason R: The Ca^{2+} may form a bridge between the negatively polarized groups of protein (or phospholipids) and PEG.

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 :

19088937853. 1

19088937854. 2

19088937855. 3

19088937856. 4

Question Number : 110 Question Id : 1908899491 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Arrange the following stages of normal development of a plant embryo in proper sequence.

- A. Globular-shaped
- B. Torpedo-shaped
- C. Heart-shaped
- D. Inverted U-shaped
- E. Walking-stick-shaped

Choose the *correct* answer from the options given below

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

Options :

19088937857. 1

19088937858. 2

19088937859. 3

19088937860. 4

Question Number : 111 Question Id : 1908899492 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: In most of the species, the stems of *in vitro* developed plants are hyperlignified.

Statement II: In most of the species, *in vitro* developed leaves show poor mesophyll differentiation and weak vasculature.

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 :



19088937861. 1

19088937862. 2

19088937863. 3

19088937864. 4

Question Number : 112 Question Id : 1908899493 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is the product encoded by the *auxA* gene of T-DNA?

1. Indole acetamidehydrolase
2. Tryptophan monooxygenase
3. Isopentenyl transferase
4. Indole monohydrolase

Options :

19088937865. 1

19088937866. 2

19088937867. 3

19088937868. 4

Question Number : 113 Question Id : 1908899494 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: In antisense constructs, the orientation of the sequence to be expressed mimics the usual arrangement of the gene.

Statement II: More efficient down-regulation is achieved by the expression of hairpin RNA (hp RNA) induced RNAi.

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 :

19088937869. 1

19088937870. 2

19088937871. 3

19088937872. 4

Question Number : 114 Question Id : 1908899495 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which crop has a major share in the genetically modified crops across the world?

1. Maize
2. Soybean
3. Cotton
4. Rice

Options :

19088937873. 1

19088937874. 2

19088937875. 3

19088937876. 4

Question Number : 115 Question Id : 1908899496 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I (Enzyme)	List II (Industrial use)
A. Avidin	I. Pharmaceuticals
B. α -Amylase	II. Brewing
C. Trypsin	III. Diagnostic kit
D. Thermostable xylanase	IV. Biomass processing
E. (1,3 or 1,4) β -Glucanase	V. Food processing

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

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

Options :

19088937877. 1

19088937878. 2

19088937879. 3

19088937880. 4

Question Number : 116 Question Id : 1908899497 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Restriction Fragment Length Polymorphism (RFLP) markers are codominant and highly reproducible.

Statement II: Cleaved Amplified Polymorphic Sequences (CAPS) approach requires radioactivity or blotting steps.

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 :

19088937881. 1

19088937882. 2

19088937883. 3

19088937884. 4

Question Number : 117 Question Id : 1908899498 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Two parental lines P1 and P2 used for the production of double haploid (DH) populations have the genotypes AABB and aabb, respectively. How many types of double haploids (DH) would be produced from their F1?

1. One
2. Two
3. Three
4. Four

Options :

19088937885. 1

19088937886. 2

19088937887. 3

19088937888. 4

Question Number : 118 Question Id : 1908899499 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Choose the name of the technique which helps to identify and analyze the protein-protein interaction.

1. Mass spectrometry (MS)
2. Suppression subtractive hybridization (SSH)
3. 2-Dimensional gel electrophoresis (2DE)
4. Yeast two-hybrid system (Y2H)

Options :

19088937889. 1

19088937890. 2

19088937891. 3

19088937892. 4

Question Number : 119 Question Id : 1908899500 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: Phylogeography is based on allele frequency distributions.

Statement II: Phylogeographic procedures are supposed to separate population structure from population history.

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 :

19088937893. 1

19088937894. 2

19088937895. 3

Question Number : 120 Question Id : 1908899501 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements-

Statement I: When two QTLs are closely linked in the coupling phase, the marker between the two QTLs will show the highest t- or F-value for single-marker analysis.

Statement II: In Bayesian analysis, everything is treated as an unknown variable with a prior distribution.

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 :

19088937897. 1

19088937898. 2

19088937899. 3

19088937900. 4