

PREVIEW QUESTION BANK

Module Name : Molecular Biology and Biotechnology - 10-ENG
Exam Date : 29-Jun-2024 Batch : 14:30-16:30

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	201	Movement of DNA from one bacterium to another through a tubular bridge or pilus: 1. Conjugation 2. Transposition 3. Transfection 4. Transduction A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
2	202	Which of the following is responsible for eliminating toxic oxygen by-products from cells? 1. Mitochondria 2. Golgi complex 3. Peroxisomes 4. Chloroplasts A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
3	203	A form of multiple parasitism in which a parasite preferentially attacks a host that is already parasitized by another species is known as 1. Cleptoparasitism 2. Ectoparasitoid 3. Obligate parasitism 4. Superparasitism A1 : 1	4.0	1.00

		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
4	204	For mass multiplication of DD-136 nematode, the common host used is 1. Silk moth 2. Fruit sucking moth 3. Codling moth 4. Lesser wax moth A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
5	205	Chlorpyrifos methyl is effective against stored product insects except 1. <i>Rhizopertha dominica</i> 2. <i>Tribolium castaneum</i> 3. <i>Caryedon serratus</i> 4. <i>Oryzaephilus surinamensis</i> A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
6	206	Which of the following insects often cause inhalational allergies in human following large emergence of adult insects 1. Stick insects 2. May flies 3. Ear wigs 4. Preying mantis A1 : 1 A2 : 2	4.0	1.00

A3 : 3

A4 : 4

Objective Question

7 207

4.0 1.00

Given below are two statements:

Statement (I): Climate is a weather condition related to smaller areas at a given place and at a given time,

Statement (II): Weather is a condition of atmosphere at a given place and at a given time

In light of the above statements, choose the *most appropriate* 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

8 208

4.0 1.00

The local name of cyclone in Phillippines is

1. Hurricane
2. Cyclone
3. Baquio
4. Typhoon

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

9 209

4.0 1.00

Which one of the following are secondary tillage implements?

- (A). Subsoiler
- (B). Cultivator
- (C). Disc harrow
- (D). Wetland plough

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

10 210

_____ is the most suitable, drought resistant and persistent grass?

- 1. *Alyosia sp.*
- 2. *Cenchrus ciliaris*
- 3. *Stylosanthes hamata*
- 4. *Sorghum bicolor*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

11 211

The rainfed area in India is approximately

- 1. 30 mha
- 2. 40 mha
- 3. 57 mha
- 4. 70 mha

A1 : 1

A2 : 2

4.0 1.00

A3 : 3

A4 : 4

Objective Question

12	212	Which nutrient is often a limiting factor in agricultural production? 1. Nitrogen 2. Carbon 3. Oxygen 4. Hydrogen A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

13	213	What is a potential disadvantage of agroforestry systems? 1. Increased soil erosion 2. Decreased carbon sequestration 3. Reduced biodiversity 4. Enhanced susceptibility to pests A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

14	214	Pungency in mustard oil is due to 1. Amino acid 2. Allyl isothiocyanate 3. Erusic acid 4. Oxalic acid A1 : 1 A2 : 2	4.0	1.00
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		A3 : 3		
		A4 : 4		
Objective Question				
15	215	Sesamum belongs to the family 1. Chenopodiaceae 2. Papilionaceae 3. Leguminosae 4. Pedaliaceae A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
16	216	Dark period is critical in which type of plant? 1. Short day plant 2. Long day plant 3. Day neutral plant 4. All the options A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
17	217	Which of the following is NOT a significant contributor to greenhouse gas emissions from livestock farming? 1. Carbon dioxide 2. Methane 3. Nitrous oxide 4. Ammonia A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

18	218	Fe deficiency is mostly seen in crops growing on 1. Calcareous or alkaline soils 2. Salt affected soils 3. Acidic soils 4. Neutral soils A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

19	219	EDV (Essentially Derived Varieties) are those which are derived from: 1. crossing two commercially known varieties 2. hybrid introduced from other countries 3. existing variety through genetic engineering or mutation 4. crossing commercially known variety with its wild relative A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

20	220	What is the role of "companion planting" in agriculture? 1. Enhancing soil fertility through crop rotation 2. Growing different crop species together to deter pests 3. Cultivating plants in hydroponic system 4. Increasing soil compaction through cover cropping A1 : 1 A2 : 2 A3 : 3	4.0	1.00
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A4 : 4

Objective Question

21	1301	Which of the following is the correct stereoisomer representing Aspartame, the artificial sweetener? 1. L-aspartyl-D-phenylalanine methyl ester 2. D-aspartyl-L-phenylalanine methyl ester 3. D-aspartyl-D-phenylalanine methyl ester 4. L-aspartyl-L-phenylalanine methyl ester A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

221302

4.01.00

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

List-I	List-II
(Unit prefix)	(Multiple)
(A). Peta	(I). 10^{-1}
(B). Deca	(II). 10^{-15}
(C). Femto	(III). 10^{15}
(D). Deci	(IV). 10^1

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

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

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

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

23	1303		4.0	1.00
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Given below are two statements:

Statement (I): Plant cells are usually smaller than animal cells.

Statement (II): Plant cells range from 10µm to 100 µm in diameter.

In light of the above statements, choose the *most appropriate* 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

24	1304	Sialic acid is also called as 1. N-Acetylgalactosamine 2. N-Acetylglucosamine 3. N-Acetylneuraminic acid 4. N-Acetylmuramic acid A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

25	1305	Which one of the following was the first amino acid to be discovered? 1. Arginine 2. Alanine 3. Glycine 4. Asparagine A1 : 1 A2 : 2 A3 : 3	4.0	1.00
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A4 : 4

Objective Question

26	1306	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A) : Archaeobacteria survive on extreme conditions like high temperature and low pH. Reason (R) : Archaeobacteria have unique membrane lipids linked through ester bonds that is more stable than ether bonds found in other lipids. In light of the above statements, choose the <i>correct</i> answer from the options given below. - Both (A) and (R) are true and (R) is the correct explanation of (A). - Both (A) and (R) are true but (R) is NOT the correct explanation of (A). (A) is true but (R) is false. (A) is false but (R) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

27	1307	Given below are two statements: Statement (I): Prostaglandins are known as eicosanoids and contain 15 carbons. Statement (II): Prostaglandins E and F were first isolated from the biological fluids. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are true. - Both Statement (I) and Statement (II) are false. - Statement (I) is true but Statement (II) is false. - Statement (I) is false but Statement (II) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

28	1308		4.0	1.00
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Given below are two statements:

Statement (I): Biological nitrogen fixation is carried out by a highly conserved complex of proteins called the nitrogenase complex.

Statement (II): Nitrogen fixation requires ten electrons for the reduction of N_2 and to produce one molecule of H_2 .

In light of the above statements, choose the *most appropriate* 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

29	I309	What is the function of mitochondria? 1. Generation of ATP 2. Synthesis of nucleotides 3. Fatty acid synthesis 4. Degradation of amino acids A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

30	I310	Given below are two statements: Statement (I): The compounds acetone, aceto-acetate and β-hydroxybutyrate are known as ketone bodies. Statement (II): Ketone bodies are synthesized in muscles and are fat-soluble in nature. In light of the above statements, choose the <i>most appropriate</i> 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. A1 : 1	4.0	1.00
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A2 : 2

A3 : 3

A4 : 4

Objective Question

31 1311

What are essential amino acids?

1. Proline and Glycine
2. Lysine and methionine
3. Lysine and alanine
4. Glutamic acid and Leucine

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

32 1312

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

List-I	List-II
Enzyme	Cofactor (Metal)
(A). Carbonic anhydrase	(I). Mo
(B). Hexokinase	(II). Zn^{2+}
(C). Nitrate Reductase	(III). Ni^{2+}
(D). Urease	(IV). Mg^{2+}

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

A1 : 1

A2 : 2

A3 : 3

4.0

1.00

A4 : 4

Objective Question

33	I313	Given below are two statements: Statement (I): The active absorption of water takes place due to the activity of root and root hairs. Statement (II): The rate of absorption depends upon transpiration in active absorption of water. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are true. - Both Statement (I) and Statement (II) are false. - Statement (I) is true but Statement (II) is false. - Statement (I) is false but Statement (II) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

34	I314	Who proposed the term isozyme? - Euler (1953) - Market and Moller (1959) - Mayrback (1952) - Thompson (1962) A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

35	I315	Which one of the following is NOT the characteristic of ephimerales? - They are short lived plants. - They are drought escaping plants. - They pass dry period in the form of seeds. - They accumulate large quantity of water and use it slowly during dry periods. A1 : 1 A2 : 2	4.0	1.00
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A3 : 3

A4 : 4

Objective Question

36 1316

4.0 1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A) : Ethylene reduces biosynthesis of auxins and inhibits its transport from the region of synthesis to the site of action.

Reason (R) : Ethylene is considered to stimulate genes and results in the inhibition of certain mRNA and enzyme.

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

- Both (A) and (R) are true and (R) is the correct explanation of (A).
- Both (A) and (R) are true but (R) is NOT the correct explanation of (A).
- (A) is true but (R) is false.
- (A) is false but (R) is true.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

37 1317

4.0 1.00

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

List-I	List-II
(Trace Element)	(Concentrations for normal plant growth)
(A). Manganese	(I). 0.02 to 0.2 ppm
(B). Molybdenum	(II). 0.1 to 0.5 ppm
(C). Iron	(III). 0.01 to 0.05 ppm
(D). Zinc	(IV). 0.5 to 5.0 ppm

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

- (A) - (III), (B) - (II), (C) - (IV), (D) - (I)
- (A) - (I), (B) - (IV), (C) - (III), (D) - (II)
- (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
- (A) - (IV), (B) - (I), (C) - (II), (D) - (III)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

38	1318	Which one of the following statements is NOT CORRECT regarding dormancy? 1. Dormancy is not a light sensitive 2. Dormancy due to seed coat 3. Dormancy due to immature embryo 4. Dormancy requires chilling treatment A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

39	1319	Which hormone inhibits gibberellin-induced enzyme production? 1. Ethylene 2. Jasmonic acid 3. Absciscic acid 4. Cytokinins A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

40	1320	What is the function of amyloplasts? 1. Storage of proteins 2. Storage of starch 3. Storage of oil 4. Storage of carbohydrates A1 : 1 A2 : 2 A3 : 3	4.0	1.00
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A4 : 4

Objective Question

41	1321	Given below are two statements: Statement (I): In acrocentric, the centromere is situated at the center of the middle part of the chromosome. Statement (II): In the sub-metacentric, the centromere is close to the center and chromosomes have unequal arms. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are true. - Both Statement (I) and Statement (II) are false. - Statement (I) is true but Statement (II) is false. - Statement (I) is false but Statement (II) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

42	1322	Given below are two statements: Statement (I): Leucoplasts and chromoplasts are considered active stages of plastids while chloroplasts as the degenerative ones. Statement (II): The chloroplast is also considered as a prokaryotic cell within an eukaryotic cell. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are true. - Both Statement (I) and Statement (II) are false. - Statement (I) is true but Statement (II) is false. - Statement (I) is false but Statement (II) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

43	1323		4.0	1.00
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Which plant hormone reports the delay in senescence?

1. Auxins
2. Gibberellins
3. Cytokinins
4. Auxins and Gibberellins

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

44 1324

4.0 1.00

Given below are two statements:

Statement (I): Long-short day plants flower only if a certain number of short days are preceded by a number of long days.

Statement (II): Ambi-photoperiodic plants can flower in short days or long days but never in intermediate daylengths.

In light of the above statements, choose the *most appropriate* 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

45 1325

4.0 1.00

Which seed layer is differentiated into palisade cells?

1. Epidermal layer
2. Cell wall layer
3. Subepidermal layer
4. Pigmented layer

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

46	1326	Which of the following restriction endonuclease pairs are isochizomers? 1. EcoRI and HindIII 2. HpaII and MspI 3. HpaI and MspII 4. EcoRI and EcoRII A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

47	1327	Which of the following genes are genetically engineered in biofortified GOLDEN RICE? 1. ACC synthase and ACC oxidase 2. ACC synthase and ACP desaturase 3. Phytoene synthase and Phytoene Desaturase 4. ACC synthase and Phytoene Desaturase A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

48	1328		4.0	1.00
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Match **List-I** with **List-II**

List-I	List-II
(Strategy)	(Mode of Action)
(A). Ribozyme/RNaseP	(I). Interferes with replication
(B). Coat Protein	(II). Binds to RNA preventing function
(C). cDNA of RNA satellite	(III). Interferes with uncoating
(D). Antisense RNA	(IV). Cleavage of RNA genome

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

49 1329

The genome edited GABA tomato is enriched in

1. Gibberlin aniline butyric acid
2. Gamma amino butyric acid
3. Glycine Alanine butyric acid
4. Gammone Butyric acid

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

50 1330

4.0 1.00

Which of the following are multi-parent population designs in plants?

1. RIL and NIL
2. BC and TC
3. NAM and MAGIC
4. SNP and KASP

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51 1331

Which of the following is not a diazotroph?

1. Pseudomonas
2. Xanthomonas
3. Nitrospira
4. Escherichia

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

52 1332

Which of the following pollen types respond best during anther culture?

1. S-grains
2. R-grains
3. T-grains
4. A-grains

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

53 1333

4.0

1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A): Hybrid Embryo rescue is important for the development of interspecific hybrids.

Reason (R) : Embryo fails to develop due to endosperm degeneration in interspecific hybrids.

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

54	1334	How many sister chromatids are in the rice (<i>Oryza sativa</i>) plant cell entering the first meiotic division?	4.0	1.00
		1. 24 2. 12 3. 48 4. 6		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

55	1335	The hammerhead ribozyme is one of the most commonly used ribozymes in technology. Which of the following statements is true about its function and structure?	4.0	1.00
		1. It has a simple structure consisting of only two stem-loop structures. 2. It cleaves RNA sequences using a water molecule in a mechanism similar to protein enzymes. 3. It can cleave any RNA sequence without needing a specific target sequence. 4. It requires a protein cofactor to function.		
		A1 : 1		
		A2 : 2		
		A3 : 3		

		A4 : 4		
Objective Question				
56	1336	Given below are two statements: Statement (I): Diethylpyrocarbonate (DEPC) is used to inactivate RNases in buffers and on glassware. Statement (II): Diethylpyrocarbonate (DEPC) is a transition state analog that binds to active sites of RNases. In light of the above statements,choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are true. - Both Statement (I) and Statement (II) are false. - Statement (I) is true but Statement (II) is false. - Statement (I) is false but Statement (II) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
57	1337	Repressor molecules bind to - Operator - Promoter - Enhancer - Hormone response element A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
58	1338		4.0	1.00

Which of the following are features of Ti-plasmid?

- (A). They contain one (or more) T-DNA region.
- (B). They contain a region enabling antibiotic resistance.
- (C). They contain a *vir* region.
- (D). They contain a region enabling conjugative transfer.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

59 1339

4.0 1.00

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

List-I	List-II
(Genes)	(Functions)
(A). <i>nif K</i>	(I). FeMo cofactor biosynthesis
(B). <i>nif A</i>	(II). β -subunit of MoFe protein of nitrogenase
(C). <i>nif S</i>	(III). Fe protein of nitrogenase
(D). <i>nif B</i>	(IV). Positive regulator of <i>nif</i> and <i>fix</i> genes
(E). <i>nif H</i>	(V). Cysteine desulfurase

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

60 1340

4.0 1.00

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

List-I	List-II
(Organism)	(Toxin produced)
(A). <i>Clostridium botulinum</i>	(I). Patulin
(B). <i>Staphylococcus aureus</i>	(II). Aflatoxin
(C). <i>Aspergillus parasiticus</i>	(III). Enterotoxin
(D). <i>Aspergillus ostianus</i>	(IV). Neurotoxin
(E). <i>Penicillium expansum</i>	(V). Ochratoxin A

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

- (A) – (V), (B) – (IV), (C) – (I), (D) – (II), (E) – (III)
- (A) – (II), (B) – (V), (C) – (IV), (D) – (III), (E) – (I)
- (A) – (IV), (B) – (III), (C) – (II), (D) – (V), (E) – (I)
- (A) – (III), (B) – (I), (C) – (II), (D) – (V), (E) – (IV)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

61 1341

4.0 1.00

Which one of the following is NOT an assumption of ANOVA?

- The data are normally distributed
- Blocks
- Same variance
- The data are independent

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

62 1342

4.0

1.00

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

List-I	List-II
(Enzymes produced industrially)	(Microbial source)
(A). Diastase	(I). <i>Saccharomyces cerevisiae</i>
(B). Invertase	(II). <i>Trichoderma konigi</i>
(C). Collagenase	(III). <i>Rhizopus</i> sp.
(D). Lipase	(IV). <i>Clostridium histolyticum</i>
(E). Cellulase	(V). <i>Aspergillus oryzae</i>

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

- (A) – (V), (B) – (IV), (C) – (I), (D) – (II), (E) – (III)
- (A) – (II), (B) – (V), (C) – (IV), (D) – (III), (E) – (I)
- (A) – (IV), (B) – (III), (C) – (II), (D) – (V), (E) – (I)
- (A) – (V), (B) – (I), (C) – (IV), (D) – (III), (E) – (II)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

63 1343

4.0

1.00

Match List-I with List-II

List-I	List-II
(Generation of DNA sequencing)	(Method)
(A). First generation	(I). HeliScope single molecule sequencer
(B). Second generation	(II). Sanger method
(C). Third generation	(III). Oxford Nanopore method
(D). Fourth generation	(IV). Illumina sequencing

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

1. (A) – (IV), (B) – (II), (C) – (III), (D) – (I)
2. (A) – (II), (B) – (IV), (C) – (I), (D) – (III)
3. (A) – (III), (B) – (I), (C) – (IV), (D) – (II)
4. (A) – (II), (B) – (III), (C) – (IV), (D) – (I)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

64 1344

4.0 1.00

Read the following statements regarding bioremediation

(A). Aerobic biodegradation of PCBs is mainly carried out by the white rot fungus, *Phanerochaete* and by *Acinetobacter* and *Alcaligenes*.

(B). *Methylococcus capsulatus* can convert chloro- and bromo methane to formaldehyde, dichloro- and trichloro methane to CO₂ while growing on methane.

(C). In most cases, pesticides that are cometabolized are completely degraded, hence cometabolism of a pesticide is always good from an environmental standpoint.

(D). *Burkholderia* dechlorinates the pesticide 2, 4, 5-T aerobically by using oxygenase enzymes and release chloride ion (Cl⁻).

(E). Reductive dechlorination is less important than oxidative dechlorination from ecological standpoint.

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

1. (A), (B) and (C) only.
2. (A), (B) and (D) only.
3. (B), (D) and (E) only.
4. (B), (C) and (E) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

65	1345	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A) : β-lactam antibiotics are given in combination with clavulanic acid. Reason (R) : Clavulanic acid binds with β-lactamase with a high affinity, inhibits it and prevents it to act on the β-lactam antibiotics. In light of the above statements, choose the <i>correct</i> answer from the options given below. - Both (A) and (R) are true and (R) is the correct explanation of (A). - Both (A) and (R) are true but (R) is NOT the correct explanation of (A). (A) is true but (R) is false. (A) is false but (R) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

66	1346	Which of the following technique is most frequently used for culture preservation in microbial culture collection centers? - Mineral oil layering - Soil stocks - Lyophilization - Paraffin method A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

67	1347		4.0	1.00
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Given below are two statements:

Statement (I): During feedback inhibition of enzyme, the activity of an enzyme already present in the cell and it is inhibited by the end product of the reaction.

Statement (II): During repression of enzyme, the synthesis of an enzyme is inhibited by the end product of the reaction.

In light of the above statements, choose the *most appropriate* 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

68	1348		4.0	1.00
Read the following statements regarding inhibition of oxidative phosphorylation : (A). Cyanide binds tightly with cytochromes and prevents their functioning. (B). The antibiotic antimycin A inhibits electron transport chain (ETC) by competing with coenzyme Q. (C). The antibiotic piericidin blocks ETC between cytochrome b and c. (D). Carbon monoxide binds tightly with cytochromes and prevents their functioning. (E). The uncouplers prevent ATP synthesis without affecting ETC itself. Choose the correct answer from the options given below: 1. (B), (C) and (D) only. 2. (A), (B) and (E) only. 3. (B), (C) and (E) only. 4. (A), (D) and (E) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4				

Objective Question

69	1349		4.0	1.00
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Microorganisms transform mercury (Hg) by the process of methylation yielding methylmercury (CH_3Hg^+). Which of the following is correct regarding toxicity of methylmercury?

1. Less toxic over Hg
2. Extremely toxic over Hg
3. Equal toxic to Hg
4. Non-toxic over Hg

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

70 1350

4.0 1.00

The use of computers to store and analyze the sequences and structures of nucleic acids and proteins, is referred as

1. Metagenomics
2. Metatranscriptomics
3. Bioinformatics
4. Biostatistics

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

71 1000551

4.0 1.00

Given below are two statements:

Statement (I): The gene p53 is often mutated in cancerous cells.

Statement (II): p53 has been defined as the "guardian of the genome."

In light of the above statements, choose the *most appropriate* 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

72	1000552	What is the diameter of the cytoskeletal fibre, microtubule? 1. 5 nm 2. 8 nm 3. 10 nm 4. 30 nm A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

731000553

4.01.00

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

List-I	List-II
(Organelle)	(Marker Enzyme)
(A). Peroxisomes	(I). Succinate Dehydrogenase
(B). Mitochondria	(II). Catalase
(C). Lysosomes	(III). Alkaline Phosphatase
(D). Plasma membrane	(IV). Acid Phosphatase

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

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

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

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question				
74	1000554	Which of the following organelles shall pellet at 600g in differential velocity centrifuge? 1. Mitochondria 2. Endoplasmic Reticulum 3. Nucleus 4. Ribosomal sub-units A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
75	1000555	Which of the following is the site for oxidative phosphorylation in prokaryotes? 1. Outer mitochondrial membrane 2. Inner mitochondrial membrane 3. Cristae 4. Plasma membrane A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
76	1000556	Given below are two statements: Statement (I): Fatty acids have long hydrocarbon chains with a terminal carboxylic group. Statement (II): Saturated fatty acids have double bond between carbon atoms. In light of the above statements, choose the <i>most appropriate</i> 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. A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

77	1000557	Given below are two statements: Statement (I): Heat shock proteins (HSPs) are produced in cells in response to heat stress. Statement (II): HSPs are also produced in response to cold, UV light and wound. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are correct. - Both Statement (I) and Statement (II) are incorrect. - Statement (I) is correct but Statement (II) is incorrect. - Statement (I) is incorrect but Statement (II) is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

78	1000558	Which of the following are the sites of fatty acid synthesis and degradation in eukaryotes? - Nucleus and cytosol - Mitochondria - Cytosol and mitochondria - Nucleus A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

79	1000559	Which class the enzyme "hexokinase" belong to? - Isomerases - Transferases - Hydrolases - Oxidoreductases A1 : 1	4.0	1.00
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A2 : 2

A3 : 3

A4 : 4

Objective Question

80	1000560	Which of the following best describes Lineweaver-Burk equation?	4.0	1.00
1. $1/V_0 = 1/V_{\max} + K_m/V_{\max} \times 1/[S]$ 2. $1/V_0 = 1/V_{\max} \times K_m/V_{\max} + 1/[S]$ 3. $1/V_0 = 1/V_{\max} + K_m/V_{\max} + 1/[S]$ 4. $1/V_0 = 1/V_{\max} - K_m/V_{\max} \times 1/[S]$				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

81	1000561	Who coined the term enzyme?	4.0	1.00
1. Emil Fisher 2. Daniel E Koshland Jr. 3. Wilhelm Kuhn 4. Anselme Payen				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

82	1000562	Which of the following conversions is true for enzyme units?	4.0	1.00
1. 1U=16.67 nanokat 2. 1U=19.20 nanokat 3. 1U= 18.37 nanokat 4. 1U= 17.71 nanokat				
A1 : 1				
A2 : 2				

A3 : 3

A4 : 4

Objective Question

83	1000563	Given below are two statements: Statement (I): Sickle Cell Anaemia (SCA) is caused due to mutation of HBB gene. Statement (II): CRISPR based gene editing can potentially edit the mutation. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are correct. - Both Statement (I) and Statement (II) are incorrect. - Statement (I) is correct but Statement (II) is incorrect. - Statement (I) is incorrect but Statement (II) is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

84	1000564	Given below are two statements: Statement (I): Chromatin remodelling is the dynamic modification of chromatin architecture thereby controlling gene expression. Statement (II): Histone acetyltransferases (HATs) affect remodelling by covalent histone modification. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are correct. - Both Statement (I) and Statement (II) are incorrect. - Statement (I) is correct but Statement (II) is incorrect. - Statement (I) is incorrect but Statement (II) is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

85	1000565		4.0	1.00
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		Given below are two statements: Statement (I): Operons are cluster of structural genes under the control of single operator. Statement (II): Regulator gene in operon ensures expression of structural genes is coordinately controlled. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are correct. - Both Statement (I) and Statement (II) are incorrect. - Statement (I) is correct but Statement (II) is incorrect. - Statement (I) is incorrect but Statement (II) is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
86	1000566	Which transposable element transposes by “copy paste” mechanism? - Class II - Class I - Class III - Class IV A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
87	1000567		4.0	1.00

Match List-I with List-II

List-I	List-II
(Genetic Code)	(Amino acid)
(A). UAA	(I). Met
(B). UAG	(II). Opal
(C). UGA	(III). Amber
(D). AUG	(IV). Ochre

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

88	1000568	Who among the following first stated the Central Dogma of Molecular Biology?	4.0	1.00
		1. James Watson 2. Fredrick Sanger 3. Har Govind Khorana 4. Francis Crick		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

89	1000569		4.0	1.00
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Which of the following is a type of RNA molecule of more than 200 nt and do not code for protein?

1. siRNA
2. miRNA
3. lncRNA
4. snoRNA

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

90 1000570

Who among the following were awarded Nobel Prize for their "discovery of RNA interference - gene silencing by double-stranded RNA"?

1. William Kaelin and Peter Ratcliffe
2. Andrew Fire and Craig Mello
3. Katalin Kariko and Drew Weissman
4. David Julius and Ardem Patapoutian

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

91 1000571

Which of the following eukaryotic initiation factors (eIFs) promotes ribosomal subunit dissociation and promotes Met-tRNA binding to 40S subunits?

1. eIF1
2. eIF2
3. eIF3
4. eIF4

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

92 1000572

4.0 1.00

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

List-I	List-II
(Blot)	(Biomolecules)
(A). Southern	(I). Protein-protein
(B). Western	(II). DNA
(C). Northern	(III). Protein
(D). Far Western	(IV). RNA

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

93	1000573	Which of the following sequencing technologies utilizes sequencing by ligation?	4.0	1.00
		1. SOLiD technology 2. NANOPORE technology 3. DNA nanoball 4. Heliscope		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

94	1000574		4.0	1.00
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Which of the following techniques can be used for quantitative estimation of protein?

1. Real Time PCR
2. ddPCR
3. ELISA
4. Reverse Transcriptase PCR

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

95	1000575	Which of the following enzymes are used in RT-PCR?	4.0	1.00
1. Reverse Transcriptase and Ligase 2. Reverse Transcriptase and <i>Taq</i> polymerase 3. Reverse Transcriptase and Polynucleotide Kinase 4. Reverse Transcriptase and Restriction Endonuclease				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

96	1000576	What is the role of the origin of replication (ori) in a plasmid?	4.0	1.00
1. It determines the copy number of the plasmid in the host cell. 2. It encodes a selectable marker such as antibiotic resistance. 3. It is responsible for the insertion of the plasmid into the host chromosome. 4. It encodes the proteins necessary for conjugation between bacterial cells.				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

97	1000577		4.0	1.00
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Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A): Gene pyramiding involves stacking multiple resistance genes in a single plant variety.

Reason (R): Gene fusion is a molecular technique that combines two or more genes to form a single hybrid gene.

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). Save
3. (A) is true but (R) is false.
4. (A) is false but (R) is true.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

98	1000578	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A): Plasmid DNA is present before digestion with restriction enzymes but is converted into a smear during digestion. Reason (R): The DNA is most likely tainted with bacterial DNase which is activated upon exposure to Mg^{2+} present in restriction buffer. In light of the above statements, choose the <i>correct</i> 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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

99	1000579		4.0	1.00
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Please arrange the steps in chromosome walking in the correct order:

- (A). Use the known DNA sequence to design a primer.
- (B). Identify a clone containing the gene of interest.
- (C). Obtain a genomic library.
- (D). Sequence the new overlapping clone.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

100 1000580

4.0 1.00

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

List-I	List-II
(Crop)	(Related Gene/Protein function)
(A). Golden Rice	(I). Insecticidal Cry I protein
(B). BT cotton	(II). Beta-Carotene enriched
(C). Ratan (<i>Lathyrus sativus</i>)	(III). Bacterial wilt resistant
(D). F211 tobacco	(IV). Low neurotoxin (BOAA) content

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)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

101 1000581

4.0

1.00

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

List-I	List-II
(Gene)	(The protein encoded and/or role in DNA repair)
(A). <i>sulA</i>	(I). Encodes RecA protein
(B). <i>recA</i>	(II). Encodes protein that inhibits cell division, possibly to allow time for DNA repair
(C). <i>dinB</i>	(III). Encodes protein that inhibits RecA recombinase function
(D). <i>ssb</i>	(IV). Encodes DNA polymerase IV
(E). <i>dinD</i>	(V). Encodes single-stranded DNA-binding protein

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

- (A) - (II), (B) - (I), (C) - (IV), (D) - (V), (E) - (III)
- (A) - (III), (B) - (I), (C) - (IV), (D) - (V), (E) - (II)
- (A) - (III), (B) - (I), (C) - (II), (D) - (V), (E) - (IV)
- (A) - (IV), (B) - (I), (C) - (II), (D) - (V), (E) - (III)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

102 1000582

4.0

1.00

At which site does the charged tRNA enter the ribosome during translation?

- A site
- P site
- E site
- D site

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

103	1000583	Given below are two statements: Statement (I): There are three classes of Aminoacyl- tRNA Synthetases. Statement (II): In Class II Aminoacyl-tRNA Synthetase, the aminoacyl group is directly transferred to the 3'-hydroxyl group of the terminal adenylate. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are true. - Both Statement (I) and Statement (II) are false. - Statement (I) is true but Statement (II) is false. - Statement (I) is false but Statement (II) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

1041000584

4.01.00

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

List-I	List-II
(Type of DNA damage)	(Repair Mechanism)
(A). Thymine dimers	(I). Homologous recombination repair
(B). Mismatched base pairs	(II). Nucleotide excision repair
(C). DNA double-strand breaks	(III). Base excision repair
(D). Deaminated cytosine	(IV). Mismatch repair

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

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

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

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

1051000585

4.01.00

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

List-I	List-II
(Plant Hormone)	(Associated Receptor or Protein)
(A). Auxin	(I). PYR/PYL/RCAR
(B). Gibberellin	(II). ETR1
(C). Absciscic acid	(III). GID1
(D). Ethylene	(IV). TIR1

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

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

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

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

106	1000586	When the growing shoot of a germinating seedling encounters an obstacle underground. It responds to the encounter in three ways, its shoot thickens, the protective hook (at the top) increases its curvature to protect the tip of the shoot, and alters its direction of growth to grow around the obstacle. This triple-response is mediated by which growth regulator? - Auxin - Gibberellins - Cytokinins - Ethylene A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

107	1000587		4.0	1.00
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What is the main cause of photoregulation of nuclear gene expression?

1. Changes in the plant's circadian rhythm
2. Changes in the plant's temperature
3. Light-dependent changes in transcription factor activity
4. Light-dependent changes in water absorption

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

108 1000588

4.0 1.00

Given below are two statements:

Statement (I): Phytochromes detect blue light.

Statement (II): Cryptochromes detect red light.

In light of the above statements, choose the *most appropriate* 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

109 1000589

4.0 1.00

Which of the following is a commonly used technique for somatic hybridization in plants?

1. Protoplast fusion
2. Cross pollination
3. Genetic recombination
4. Meristem culture

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

110	1000590	Which of the following serves as the fusogenic agent? 1. Polyethylene glycol 2. Ethanol 3. Methanol 4. Proponal A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

111	1000591	What is a plant tissue culture repository? 1. A laboratory where plant tissue cultures are created. 2. A storage facility where plant tissue cultures are kept for the long term. 3. A database containing information about different plant species. 4. A greenhouse where tissue-cultured plants are acclimatized. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

112	1000592		4.0	1.00
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Match **List-I** with **List-II**

List-I	List-II
(Compound)	(Molecular Weight)
(A). Ammonium nitrate	(I). 61.83
(B). Potassium chloride	(II). 74.55
(C). Potassium nitrate	(III). 80.04
(D). Boric acid	(IV). 101.11
(E). Potassium iodide	(V). 166.01

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

- (A) - (III), (B) - (II), (C) - (V), (D) - (I), (E) - (IV)
- (A) - (I), (B) - (II), (C) - (III), (D) - (IV), (E) - (V)
- (A) - (V), (B) - (I), (C) - (IV), (D) - (II), (E) - (III)
- (A) - (III), (B) - (II), (C) - (IV), (D) - (I), (E) - (V)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

113 1000593

4.0 1.00

Given below are two statements:

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

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

In light of the above statements, choose the *most appropriate* answer from the options given below.

- Both Statement (I) and Statement (II) are true.
- Both Statement (I) and Statement (II) are false.
- Statement (I) is true but Statement (II) is false.
- Statement (I) is false but Statement (II) is true.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

114 1000594

4.0

1.00

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

List-I	List-II
(Selectable marker gene)	(Selection mechanism)
(A). <i>uidA</i>	(I). Growth in the absence of exogenous cytokinin.
(B). <i>ipt</i>	(II). Complementation of missing component medium.
(C). <i>bar</i>	(III). Antibiotic resistance.
(D). <i>pmi</i>	(IV). Alternative carbon source.
(E). <i>hpt</i>	(V). Herbicide resistance.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

115 1000595

4.0

1.00

Which of the following best describes biofortification?

1. The process of fortifying food products with additional nutrients during processing
2. The use of organic farming methods to increase the nutrient content of the soil.
3. The process of spraying crops with nutrient-rich solutions to increase their nutrient content.
4. The process of increasing the nutrient content of crops through genetic modification.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

116	1000596	What is the enzyme encoded by the <i>auxB</i> gene of T-DNA? 1. Indole acetamidehydrolase 2. Tryptophan monooxygenase 3. Isopentenyl transferase 4. Aminoglycoside adenylyltransferase A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

117	1000597	Given below are two statements: Statement (I): Recombinant Inbred Lines (RILs) are developed by inbreeding F2 individuals from a cross for several generations. Statement (II): Near-isogenic lines (NILs) are populations that are genetically identical except at a single locus. In light of the above statements, choose the <i>most appropriate</i> 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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

118	1000598		4.0	1.00
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Arrange the following steps in the process of Genomic Selection in the correct order:

- (A). Predict the genomic breeding values of the individuals based on their genotype.
- (B). Select the best individuals based on their genomic breeding values for breeding the next generation.
- (C). Generate a training population with known phenotypes and genotypes.
- (D). Genotype the selection candidates.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

119	1000599	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A): DNA barcoding uses a short genetic sequence from a standard part of the genome to identify species. Reason (R): DNA barcoding always uses the entire genome sequence of an organism for identification. In light of the above statements, choose the <i>correct</i> 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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

120	1000600	Which of the following techniques can be used in physical mapping? 1. Restriction mapping and Fluorescence in situ hybridization (FISH). 2. Polymerase Chain Reaction (PCR) and DNA sequencing. 3. Southern blotting and Northern blotting. 4. DNA Microarray and Next Generation Sequencing.	4.0	1.00
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		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		