PREVIEW QUESTION BANK

Module Name : PLANT BIOTECHNOLOGY-ENG
Exam Date : 09-Jul-2023 Batch : 10:00-12:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	101	Match **List I** with **List II** **List I** — **Name of the Fatty Acid** (A) Oleic acid (B) Petroselenic acid (C) Gamma linolenic acid (D) Eicosapentaenoic acid **List II** — **Type of the fatty acid** (I) ω-3 (II) ω-6 (III) ω-12 (IV) ω-9 Choose the ***correct*** answer from the options given below: 1. (A) - (I), (B) - (II), (C) - (III), (D) - (IV) 2. (A) - (II), (B) - (I), (C) - (IV), (D) - (III) 3. (A) - (III), (B) - (II), (C) - (I), (D) - (IV) 4. (A) - (IV), (B) - (III), (C) - (II), (D) - (I) A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
2	102	Nucleosome- a fundamental unit of chromatin- contains a nucleosome core, which is composed of 146 bp (approx.) of DNA wrapped around histone octamer having which of the following composition? 1. Two copies each of H1, H2A, H2B and H3 histone proteins 2. Two copies each of H2A, H2B, H3 and H4 histone proteins 3. Two copies each of H2A, H2B, H3 and H5 histone proteins 4. Two copies each of H1, H2A, H2B, and H4 histone proteins A1 : 1 A2 : 2	4.0	1.00

A3 : 3

A4 : 4

Objective Question

3 103 4.0 1.00

The number of stereoisomers for *n*-carbon aldoses and ketoses respectively are:

1. $2^{(n-2)}$ and $2^{(n-3)}$
2. $2^{(n-2)}$ and $2^{(n-1)}$
3. $2^{(n-1)}$ and $2^{(n-2)}$
4. $2^{(n-3)}$ and $2^{(n-2)}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

4 104 4.0 1.00

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

List-I	**List-II**
Molecule	**Type of peptide**
(A) Aspartame	(I) Tripeptide
(B) Glutathione	(II) Tetrapeptide
(C) Oxytocin	(III) Nonapeptide
(D) Endomorphin	(IV) Dipeptide

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

5 105

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

Assertion (A) : Depsipeptides have more flexible structure and lower rotational barrier for *cis-trans* isomerization than their native analogs.

Reason (R) : One or more amide linkages in depsipeptides are replaced with corresponding ester groups leading to their reduced hydrogen bonding capacity, which in turn results in deformed secondary structures.

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

4.0 1.00

Objective Question

6 106

The Old Yellow Enzyme (OYE), isolated by Warburg and Christian from brewers' bottom yeast in 1932, has been shown to comprise of a colourless apoprotein and a yellow cofactor. Subsequent identification of the nature of this yellow cofactor demonstrated that OYE is a(an):

1. Ribozyme
2. Flavoenzyme
3. Metalloenzyme
4. Abzyme

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

7 107

4.0 1.00

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

List-I	**List-II**
Reaction catalyzed/Name of the enzyme	**Class of enzyme**
(A) Formation and removal of carbon-carbon double bonds	(I) Ligase
(B) Amino acyl – tRNA synthetase	(II) Hydrolase
(C) Transamination	(III) Lyase
(D) Removal of fatty acids from triglycerides	(IV) Transferase

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

8 108

The catalytic center of which of the following protease families consists of a catalytic triad of aspartate, histidine and serine ?

1. Cysteine proteases
2. Aspartic proteases
3. Serine proteases
4. Metalloproteases

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

9 109

4.0 1.00

The first three steps of the β-oxidation pathway of fatty acyl-CoA, chemically resemble the citric acid cycle reactions carrying out which of the following biochemical conversion?

1. Oxaloacetate to α-ketoglutarate
2. Citrate to Succinyl-CoA
3. Succinate to Oxaloacetate
4. Isocitrate to Succinate

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

10 110 4.0 1.00

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

List-I		**List-II**	
Name of the enzyme		**Role in the fatty acid oxidation**	
(A)	2,4-dienoyl-CoA reductase	(I)	Involved in the α-oxidation of branched fatty acids formed from the degradation of side chain of the chlorophyll.
(B)	Phytanoyl- CoA hydroxylase	(II)	Involved in the oxidation of unsaturated fatty acids
(C)	Acyl-CoA oxidase	(III)	Involved in the ω-oxidation of medium chain fatty acids in the endoplasmic reticulum
(D)	Cytochrome P450	(IV)	Involved in the peroxisomal β-oxidation

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

11 111

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

Assertion (A) : The addition of fluoride to fermenting yeast extracts causes the buildup of 3-phosphoglycerate and 2-phosphoglycerate.

Reason (R) : The fluoride strongly inhibits the enolase enzyme in the presence of inorganic phosphate (P*i*) by forming a tightly bound complex with the Mg^{2+} at the enzymes's active site.

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

4.0 1.00

Objective Question

12 112

During glycolysis, the enzyme phosphoglycerate mutase catalyses the conversion of 3-phosphoglycerate (3PG) to 2-phosphoglycerate (2PG) through formation of 2,3-bisphosphoglycerate (2,3-BPG) intermediate. The phosphoryl group to 3PG for the the formation of 2,3-BPG is transferred from which of the followings:

1. Adenosine triphosphate
2. Acetyl phosphate
3. Pyrophosphate
4. Phospho-histidine residue present at the active site of the phosphoglycerate mutase

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

13 113

4.0 1.00

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

List-I	**List-II**
Coenzyme/Prosthetic group of Pyruvate Dehydrogenase Multienzyme Complex	**Location on Multienzyme Complex**
(A) Nicotinamide adenine dinucleotide	(I) Bound to Dihydrolipoyal dehydrogenase (E3)
(B) Lipoic acid	(II) Covalently linked to a Lysine on Dihydrolipoyal transacetylase (E2)
(C) Coenzyme A	(III) Substrate for E2
(D) Flavin adenine dinucleotide (FAD)	(IV) Substrate for E3

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question					
14	114			4.0	1.00

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

List-I		**List-II**	
Inhibitor/Redox carrier in Electron Transport Chain		**Action**	
(A)	Amytal	(I)	Inhibits FAD-linked oxidation
(B)	Antimycin	(II)	Inhibits NAD^+-linked oxidation
(C)	Tetramethyl-*p*-phenylenediamine (TMPD)	(III)	Completely inhibits oxidation of all electron donors
(D)	Sodium azide	(IV)	Transfers electrons directly to Cytochrome C

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

15 115 4.0 1.00

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

Assertion (A) : The "**Randle Cycle**" describes the inhibition of the glycolysis by fatty acid oxidation.

Reason (R) : Oxidation of fatty acids increases the concentration of citrate that in turn inhibits the phosphofructokinase enzyme of glycolytic pathway.

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

16 116 4.0 1.00

The chemical identity of Oxygen Evolving Centers (OEC) present in the Photosytem-II of plants and cyanobacteria is:

1. Oxygented carotenoids
2. Oxylipins
3. Metal-oxygen clusters
4. Fe-S clusters

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

17 117 4.0 1.00

The energetic efficiency (*in terms of number of ATP equivalents per absorbed photon*) of non-cyclic electron transport process in photosynthesis, after taking into account the ATPs yielded by NADPH produced in it, is:

1. 0.5
2. 0.667
3. 1.25
4. 4.0

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

18 118 4.0 1.00

The pyruvate-phosphate dikinase (PPDK) is a key enzyme of photosynthesis and catalyses a reaction similar to the one catalyzed by the pyruvate kinase (PK)-a glycolytic enzyme. Which of the following statements about these two enzymes is true?

1. PPDK catalyses an irreversible reaction.
2. PPDK consumes one molecule of ATP for each molecule of pyruvate converted into PEP.
3. PK catalyses a reversible reaction.
4. PK consumes one molecule of ATP for each molecule of PEP converted into pyruvate.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

19 | 119 | 4.0 | 1.00

Which of the following regions of Nitrate reductase (NR) enzyme is extremely important for the 14-3-3 protein-mediated posttranslational regulation of its activity?

1. Hinge1(H1) region between Molybdenum cofactor (MoCo) and the Heme domain
2. Hinge2 (H2) region between Heme and FAD domain
3. Acidic residues-rich N-terminal region preceding MoCo domain
4. The C-terminal part of FAD domain

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

20 | 120 | 4.0 | 1.00

The synthesis and/or activity of the nitrogenase enzyme gets stimulated by which of the following conditions?

1. Low glutamine/α-ketoglutarate ratio
2. Higher expression of Dinitrogenase reductase ADP-ribosyl transferase (DRAT) enzyme
3. High oxygen concentration
4. High expression of Nif L protein

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

21	121	Which of the following amino acids in a protein or peptide does not contribute significantly towards its UV absorption at 280 nm? 1. Tryptophan 2. Tyrosine 3. Phenylalanine 4. Cysteine A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

22	122	Which of the following interventions would result in enhanced chromatographic separation ? (A) Increasing the number of theoretical plates (B) Decreasing the Height Equivalent to a Theoretical Plate (HETP) (C) Decreasing the column height (D) Decreasing the size of the particles used to pack a column 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	4.0	1.00

Objective Question

23 123 4.0 1.00

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

List-I	List-II
Name of the lipid	**Nature of the lipid**
(A) Ceramide	(I) Ether glycerophospholipid
(B) Cerebroside	(II) Acidic (charged) glycosphingolipid
(C) Ganglioside	(III) Structural parent of all sphingolipids
(D) Platelet Activating Factor	(IV) Neutral Glycosphingolipid

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

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

24 124 4.0 1.00

Some of the exceptional properties of regulatory/allosteric enzymes are:

(A) Their Kinetics do not obey the Michaelis-Menten equation.

(B) They are mostly monomeric in nature.

(C) They have more than one substrate binding sites and the substrate binding to different sites is mutually independent, exclusive and noncooperative.

(D) Binding of effector molecules to them may lead to their activation or inhibition.

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. (A) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

25 125 4.0 1.00

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

List-I	**List-II**
Name of the component	**Vitamin/Coenzyme**
(A) Pantothenic acid	(I) NAD
(B) *Para*-Amino Benzoic Acid (PABA)	(II) Coenzyme A
(C) Ribose	(III) Folic acid
(D) Pentanoic acid	(IV) Lipoic acid

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

26 126 4.0 1.00

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

List-I	**List-II**
Mineral	**Deficiency Symptom**
(A) Manganese	(I) Neurological abnormalities due to sulfite oxidase deficiency
(B) Selenium	(II) Poor Vitamin D status due to lesser formation of biologically active form of Vitamin D
(C) Magnesium	(III) Enhanced oxidative stress
(D) Molybdenum	(IV) Poor wound healing due to the inactivation of Prolidase enzyme

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

27 127 4.0 1.00

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

Assertion (A) : The CAM plants undergo night time acidification and day time deacidification

Reason (R) : The CAM plants take up CO_2 during day time, store it in the form of malate in vacuoles and break it down to release CO_2 in the night time.

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

28 128 4.0 1.00

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

Assertion (A) : The free histidine is a dominant buffering system at physiological pH than the protein-bound or dipeptide histidine.

Reason (R) : In proteins or dipeptides, the imidazole pKa decreases substantially-in combination with other amino acids- to a level which is more than 1 pH unit removed from intracellular pH.

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. Both **(A)** and **(R)** are false.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

29 129 4.0 1.00

Characteristics of bundle sheath cells in C_4 plants

(A) Have thin cell walls

(B) Contain centrifugally arranged chloroplasts

(C) Contain stacked thyllakoid membranes and do not have starch granules

(D) Carry out light-independent reactions of photosynthesis

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

30 130

Which of the following metabolites is not an intermediate in the triglyceride biosynthesis by Kennedy pathway?

1. Lysophosphatidic acid
2. Phosphatidic acid
3. Diacylglycerol
4. Glyceraldehyde-3-Phosphate

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

31 131

In a nucleotide sequence ATGC, which of the following nucleotide has the unlinked 5' -OH?

1. deoxyadenylate
2. deoxycytidylate
3. deoxythymidylate
4. deoxyguanylate

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

32 132

Which of the following subunit of RNA polymerase complex is absent during elongation phase of bacterial transcription?

1. α subunit
2. β subunit
3. β' subunit
4. σ subunit

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

33	133	Which of the following is not related to termination of a transcript in E. coli? 1. Intrinsic terminators 2. Rho protein 3. N protein 4. NusA	4.0	1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

34	134	What are isoaccepting tRNAs? 1. Different tRNAs that have same length 2. Different amino acids that are carried by same tRNA 3. Different tRNAs that are specific for the same amino acids 4. Different tRNAs that have same sequence	4.0	1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

35	135		4.0	1.00

		The consensus sequence 5'-ACCAUGG-3; is also known as 1. Kozak sequence 2. Shine-Dalgarno sequence 3. Transcription termination signal sequence 4. D-loop of tRNA A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
36	136	Which of the following is Type II restriction enzyme? 1. HindII 2. EcoK 3. EcoB 4. HinfIII A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
37	137	Which of the following is the activity of reverse transcriptase? 1. Synthesis of cDNA from mRNA 2. Synthesis of cDNA from DNA 3. Removal of 5' $-PO_4^-$ 4. Removal of single strand protrusion from the ends A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

38 | 138 | 4.0 | 1.00

pBluescriptSK is an example of

1. Phagemid vector
2. Cosmid vector
3. Phasmid vector
4. Plasmid vector

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

39 | 139 | 4.0 | 1.00

Which of the following chemical is used to make E. coli cells competent to take external DNA?

1. Sodium acetate
2. SDS detergent
3. $CaCl_2$
4. NaOH

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

40 | 140 | 4.0 | 1.00

In Northern hybridization?

1. DNA sample is immobilized on the membrane
2. RNA sample is immobilized on the membrane
3. Copy number of transgene can be known
4. Can be used only for transgenic characterization

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

41 141

Which of the following structure is commonly found in both prokaryotes and eukaryotes?

1. Centrosome
2. Ribosomes
3. Vacuoles
4. Mesosomes

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

42 142

Which of the following is not a part of endomembrane system?

1. Plasmodesmata
2. ER
3. Golgi complex
4. Peroxisomes

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

43 143

If half of the progenies of a test cross are having recessive trait, what would be the genotypes of a dominant parent

1. Homozygous dominant
2. Heterozygous dominant
3. Trait is governed by multi loci
4. Trait is epistatic

A1 : 1

A2 : 2

4.0 1.00

A3 : 3

A4 : 4

Objective Question

44 144 4.0 1.00

SWISS-PROT, which provides detail sequence annotation including, structure, function and protein family assignment, is an example of

1. Secondary database
2. Primary database
3. Specialized database
4. Curated nucleotide sequence database

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

45 145 4.0 1.00

Which of the following method can be used for sterilization of seeds to be used in tissue culture?

1. Surface sterilization using sterilizing agents
2. Dry heat
3. Flame sterilization
4. Air blown through laminar flow

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

46 146 4.0 1.00

Which of the following is not used in protoplast fusion?

1. Ca^{++} treatment
2. PEG
3. High pH
4. $CsCl_2$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

47 147

Which of the following is true about E. coli DNA ligase

(A) Catalyzes the formation phosphodiester bond between 3'-OH and 5' -PO_4^- group of a DNA strand

(B) Requires ATP as energy source

(C) Requires NAD+ as energy source

(D) It can ligate two molecules of single-stranded DNA

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

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

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

48 148

Which of the following statement is correct for 70S ribosome?

(A) The 16S RNA belongs to small subunit.

(B) It also has 8S RNA.

(C) The 5S RNA belongs to 50S subunit.

(D) It can be dissociated into 40S and 30S subunit.

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

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

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

49 149

Statement (A) : The resolution of genetic map depends on the number of crossovers which have been scored.

Statement (B) : Genetic maps have limited accuracy as the recombination are more likely to occur at some points than at others.

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

1. Both **(A)** and **(B)** are correct.
2. Both **(A)** and **(B)** are incorrect.
3. Only **(A)** is correct, **(B)** is not correct.
4. Only **(B)** is correct, **(A)** is not correct.

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

50 150

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

List-I	List-II
(A) RNA sequencing	(I) Global gene expression of known gene
(B) Northern hybridization	(II) Transcript expression
(C) qPCR	(III) Relative transcript expression
(D) Microarray	(IV) Global gene expression of unknown gene
	(V) Phosphorylation-dephosphorylation of proteome

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

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

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51 151 4.0 1.00

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

List-I	List-II
(A) Southern hybridization	(I) Western blotting
(B) Presence of protein of interest	(II) Y-2H
(C) Peptide sequence	(III) Integration of transgene
(D) Interaction of two transcription factors	(IV) Mass spectrometry
	(V) Enzyme activity assay

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

52 152 4.0 1.00

Abortive transduction is an example of?

1. Generalized transduction
2. Specialized case of complete transduction
3. Specialized case of sexduction
4. Specialized case of transformation

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

53	153	What is the correct extended form of IBSC? 1. International Biotechnology Science Congress 2. International Biosafety Congress 3. Institutional Biosafety Committee 4. Industrial Biotechnology Science Consortium A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

54	154	Where is the National Institute for Plant Biotechnology located in India? 1. Ranchi 2. New Delhi 3. Hyderabad 4. Bangalore A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

55	155	GEAC comes under which of the following ministry/department of Government of India? 1. Ministry of Agriculture & Farmers Welfare 2. Ministry of Science, Technology & Earth Sciences 3. Ministry of Environment, Forest and Climate Change 4. Ministry of Commerce and Industry A1 : 1	4.0	1.00

A2 : 2

A3 : 3

A4 : 4

Objective Question

56	156	In Prokaryotes, the genetic material, double-stranded single circular DNA is found in which region of the cell 1. Nucleus 2. Nucleoid 3. Protonucleus 4. Nucleoplasm	4.0	1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

57	157	The tissue culture technique used to produce seedless fruit is 1. Meristem culture 2. Anther culture 3. Pollen culture 4. Endosperm culture	4.0	1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

58	158		4.0	1.00

Which of the following is correct for the Primer Annealing Temperature in a PCR ?

(A) Base composition and length of the template DNA

(B) Melting temperature of the primer

(C) Base composition and length of the primer

(D) Genomic DNA content of the plant tissue

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

59 159 4.0 1.00

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

List-I (Book/Theory proposed/ Characteristic, etc.)	**List-II** (Author/Thinker/Name of Theory, etc.)
(A) Schiffs Reagent	(I) Nucleic Acid to Protein
(B) Central Dogma	(II) DNA
(C) Chromosome	(III) Feulgen reaction
(D) Ultraviolet light of 2600 angstorms	(IV) DNA and Histone proteins

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

60 160 What is the estimated size of Human genome? 4.0 1.00

1. 3.2 billion base pairs
2. 2.2 billion base pairs
3. 4.1 billion base pairs
4. 5.1 billion base pairs

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

61 161 Which of the following is a multiple sequence alignment tool? 4.0 1.00

1. SCOP
2. PDB
3. GOLD
4. Clustal W

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

62 162 What is the first sequenced protein? 4.0 1.00

1. Insulin
2. Hemoglobin
3. Actin
4. Myosin

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

63 163

Golden rice, a rice variety, was developed by

1. Landsteiner and Weiner
2. Ingo Potricus and Peter Beyer
3. Alec Jaffreys and Kary Mullis
4. Jacob and Monad

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

64 164

In lac operon which of the following statements are true

(A) *lac* operon contains three genes: *lacZ*, *lacY*, and *lacA*. These genes are transcribed as a single mRNA, under control of one promoter

(B) When lactose is available, the *lac* repressor binds tightly to the operator, preventing transcription by RNA polymerase

(C) Operator overlaps with the promoter and is a negative regulatory site bound by the *lac* repressor protein

(D) *lac* operon contains genes that specify proteins to help the cell utilize lactose and also contains a number of regulatory DNA sequences

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

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

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

65 165

4.0 1.00

		Enzyme required for removing RNA primer during DNA replication is 1. DNA primase 2. Endonucleases 3. DNA Polymerase III 4. DNA Polymerase I A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
66	166	Sigma factor is component of 1. DNA polymerase III 2. RNA polymerase 3. DNA polymerase II 4. Endonuclease A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
67	167		4.0	1.00

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

List-I	**List-II**
Genome edited crops approved for commercial production	**Trait**
(A) Maize	(I) High level of GABA
(B) Soybean	(II) Non- Browning
(C) Potato	(III) Waxy Starch
(D) Tomato	(IV) Oleic Acid

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

68 168

The RNA polymerase that is required for the synthesis of mRNA is

1. RNA polymerase
2. RNA polymerase III
3. Reverse Transcriptase
4. RNA polymerase II

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

69 169

4.0 1.00

Type II Restriction Endonucleases are the most important enzymes used for gene cloning. Type-II Restriction endonucleases include

1. EcoRI
2. EcoBI
3. EcoB
4. EcoP15

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

70 | 170 | 4.0 | 1.00

5' end of DNA is characterized by

1. Hydroxyl group
2. Peptide bond
3. Nitrous group
4. Phosphate group

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

71 | 171 | 4.0 | 1.00

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

List-I		**List-II**	
Technique		**Function/Application/Use**	
(A)	Southern Blotting	(I)	Substrate is converted to coloured end product
(B)	ELISA	(II)	Amplification of DNA fragments
(C)	Gel Electrophoresis	(III)	Technique used to separate DNA based on their size and electrical charge
(D)	PCR	(IV)	Transfer of DNA fragments from electrophoretic gel to a nitrocellulose sheet

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

72 | 172 | 4.0 | 1.00

Two hormones required for a callus to differentiate are

1. Auxin and cytokinin
2. Auxin and Abscisic acid
3. Ethylene and Auxin
4. Cytokinin and gibberellin

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

73 | 173 | 4.0 | 1.00

		ICAR- National Bureau of Agriculturally Important Microorganisms (NBAIM) is located at 1. Chandigarh 2. New Delhi 3. Mau 4. Mumbai A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
74	174	Hybridoma technique is generally used for the production of 1. Monoclonal antibody 2. Bt Toxin 3. Herbicide Glyphosate 4. Hybrids micropropagation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
75	175	Which of the following vector can carry the longest piece of foreign DNA 1. BAC 2. YAC 3. Cosmid 4. Plasmid A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

76	176	Reverse transcriptase enzymes is used in 1. mRNA Synthesis 2. tRNA Synthesis 3. cDNA Synthesis 4. Vector synthesis A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

77	177	Which of the following is a vector mediated gene transfer method 1. Biolistic 2. Agrobacterium Mediated 3. Gene Gun 4. Microinjection A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

78	178	Some base substitutions do not result in change in amino acid sequence of the polypeptide because 1. Universality of the codon 2. triplet nature of codon 3. Co- linearity 4. Degeneracy of genetic codon A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

79 179 4.0 1.00

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

List-I (Book/Theory proposed/Characteristic, etc.)	**List-II** (Author/Thinker/Name of Theory, etc.)
(A) Orthologues	(I) Removal of Introns
(B) Splicing	(II) Protein fingerprinting
(C) Mass spectrometry	(III) Nucleotide database
(D) EMBL	(IV) Homologous genes found in different organisms

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

80 180 4.0 1.00

The T1 Plants showed 3:1 segregation for the selected trait and gene. When the 3 T1 plants with the target gene were selfed, which one of the following statements explain the results

1. Two of three plants produced all the progeny plants with the gene
2. All three plants produced all the progeny plants with the gene
3. Only one out of 3 plants produced all the progeny plants with the gene
4. All the three plants produced progeny plants which showed segregation for the gene

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

81 181

The intercellular space between cell membranes and the space of the cell walls is termed as

1. Symplast
2. Middle lamella
3. Pectin
4. Apoplast

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

82 182

Which of the following statement/s is/are true?

(A) Almost all postharvest technologies manipulate the metabolism of the harvested highly perishable produce by minimizing the respiration rate and increasing water loss.

(B) Respiration in postharvest tissues often increases the temperature of the perishable produce during storage.

(C) Physiological maturity refers to the stage in the development of fruits/vegetables when maximum growth and maturation have occurred.

(D) High transpiration rates from the harvested produce will not lead to any economic effect as this physiological process helps maintain cooler surface temperatures.

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

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

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

83 183

The highly perishable farm produce is

1. Apple
2. Tomato
3. Cauliflower
4. Finger millet

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

84 184

The component of the plant mitochondrial electron transport chain that provides an alternative route for electrons passing through the electron transport chain to reduce oxygen is

1. Cytochrome-C Oxidase
2. Alternative Oxidase (AOX)
3. NADH-dehydrogenase
4. ATP-Synthase

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

85 185

The nutrient element that is considered as a mobile element in plants is

1. Iron
2. Calcium
3. Sulfur
4. Magnesium

A1 : 1

A2 : 2

4.0 1.00

A3 : 3

A4 : 4

Objective Question

86 186 4.0 1.00

The biochemical reactions in which carbohydrates are converted into aromatic amino acids occur in

1. Calvin Cycle
2. Glycolysis
3. Shikimic acid pathway
4. EMP pathway

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

87 187 4.0 1.00

The commonly translocated compound (photosynthate) in the phloem is

1. Glucose
2. Mannose
3. Sucrose
4. Fructose

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

88 188 4.0 1.00

Choose the WRONGLY-matched answer/s.

(A) Sorghum: Kranz anatomy

(B) Blackman: Law of limiting factors

(C) IBA: Natural auxins

(D) PS I: P680

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

89	189		4.0	1.00

Strigalactones, a natural plant growth hormones, has been shown to regulate

1. Root initiation
2. Branching
3. Flowering
4. Fruit set

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

90	190		4.0	1.00

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

List-I (Growth regulators)	**List-II** (Use/application)
(A) TIBA	(I) Regulation of leaf angle
(B) 1-MCP	(II) Inhibitor of ethylene response
(C) Paclobutrazol	(III) Flowering in mango
(D) Brassinosteroids	(IV) Inhibitor of auxin transport

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

91 191 4.0 1.00

The formative effects of IAA is

1. Induction of bud dormancy
2. Maintenance of apical dominance
3. Induction of senescence
4. Prevention of cell division

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

92 192 4.0 1.00

The 'heart rot' of beets, 'stem crack' of celery, 'water core' of turnip are the deficiency symptoms of

1. Boron
2. Calcium
3. Zinc
4. Copper

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

93	193	The typical earliest symptom of magnesium deficiency in plants is 1. Interveinal chlorosis of older leaves 2. Interveinal chlorosis of younger leaves 3. Necrotic spots on the leaves 4. Dark green pigmentation of older leaves A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

94	194		4.0	1.00

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

List-I (Book/Theory proposed/ Characteristic, etc.)	**List-II** (Author/Thinker/ Name of Theory, etc.)
(A) Finger millet	(I) C3
(B) Rice	(II) C3-C4 intermediate
(C) Pineapple	(III) C4
(D) Alternanthera	(IV) CAM

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

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

95 195 4.0 1.00

Retention of full genetic potential (in a differentiated cell) for the development into a complete plant is termed as

1. Differentiation
2. Regeneration
3. Totipotency
4. Morphogenesis

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

96 196 4.0 1.00

The scientist who proposed that chemical messengers are responsible for the growth and development of plants is

1. Boysen-Jensen
2. Julies von Sachs
3. Folke Skoog
4. Darwin

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

97 197 4.0 1.00

Phytochromes are photoreceptors required for light-sensing in plants. The red-light-absorbing state (Pr) absorbs light of a wavelength of

1. ~667 nm
2. ~380 nm
3. ~887 nm
4. ~480 nm

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

98 198 4.0 1.00

The formula for estimating Leaf Area Index (LAI) is

1. LAI = (Total leaf area of a plant)/(Ground area occupied by the plant)
2. LAI = (Leaf area per plant)/(Plant dry weight)
3. LAI = (Leaf dry weight)/(Plant dry weight)
4. LAI = (Leaf area)/(Leaf weight)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

99 199

Crop Water use efficiency (WUE) is defined as

1. The amount of carbon assimilated as biomass or grain produced per unit of water used
2. The amount of water lost though transpiration per unit amount of carbon assimilated
3. The amount of carbon assimilated per unit amount of light intercepted
4. The ratio between the economic yield and total biological yield.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

100 200

The phenomenon of the cold requirement for flowering is termed as

1. Stratification
2. Vernalization
3. Phototropism
4. Thigmotropism

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

101 201

4.0 1.00

In actively growing plant cells (rice, wheat, groundnut etc.), this component of water potential becomes negligible

(A) Solute potential

(B) Pressure potential

(C) Matric potential

(D) Gravitational potential

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

102	202	Nucleolus is the site for the synthesis of this component in a cell 1. Nucleosome 2. Ribosomes 3. DNA 4. Chromation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

103	203	An example of long day plant 1. Cotton 2. Sugarbeet 3. Chrysanthemun 4. Tobacco	4.0	1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

104 204 4.0 1.00

Given below are two statements:

Statement I : Dichlorophenyl dimethylurea (DCMU), also known as Diuron - used as herbicide, is an inhibitor of light reactions of photosynthesis.

Statement II : DCMU acts by accepting electrons from early receptors of PS I.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

105 205 4.0 1.00

Chlorophyll biosynthesis begins with this amino acid

1. Glycine
2. Glutamic acid
3. Aspartic acid
4. Alanine

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

106 206 4.0 1.00

Photorespiration is found to be zero (or) negligible in these crop plants

(A) Sunflower

(B) Pineapple

(C) Amaranthus

(D) Fingermillet

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

107	207	Quantum yield of oxygen production in the light reactions of photosynthesis is 1. 10 2. 1 3. 0.1 4. 0.01 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

108	208	Identify the scientist(s) who gave the term "Hydroponics" for growing of plants in water culture 1. Yabuta and Sumuka 2. Gericke 3. Lang and Melchers 4. Borthwick and Hendris	4.0	1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

109 209

With reference to the vase-life of cut-flowers, identify the ***correct*** statement(s)

(A) For prolonging life and quality, cut-flowers are often held in holding (or) vase solutions

(B) The vase solutions contain a combination of carbohydrates, growth regulators, inhibitors and minerals.

(C) Any vase solution must contain essential two components i.e., mineral salts and ethylene inhibitors.

(D) Mineral salts help in preventing plugging of conducting tissues while ethylene inhibitors make available the respiratory substrates.

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

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

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

110 210

Seed dormancy is broken by mechanical scarification in this crop

1. Cotton
2. Castor
3. Coriander
4. Chickpea

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

111 211 4.0 1.00

Identify the "Orthodox" seeds

(A) Sorghum

(B) Mango

(C) Sapota

(D) Cotton

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

112 212 4.0 1.00

Given below are two statements:

Statement (I) : The Photosythetic Photon Flux Density (PPFD) at which the CO_2 uptake by photosynthesis exactly equal to CO_2 released through respiratory process is called Light Compensation Point (LCP).

Statement (II) : LCP of sun plants range from 1 - 5 μmol m^{-2} s^{-1}, whereas the corresponding values for shade plants are 10 - 20 μmol m^{-2} s^{-1}

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

113 213

The enzyme requiring nickel in higher plants is

1. Catalase
2. Alkaline phosphatase
3. Carbonic anhydrase
4. Urease

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

114 214

The test which is used to determine the difference between the observed frequencies and expected frequencies in one or more than one categories is

1. Z - test
2. t - test
3. Chi - square test
4. ANOVA

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

115 215

4.0 1.00

Match **List-I** with **List-II** pertaining to the Crop Production in India

List - I	**List - II**
(Name of the Crop)	**(Major State of Production)**
(A) Cotton	(I) Uttar Pradesh
(B) Mustard	(II) Karnataka
(C) Potato	(III) Rajasthan
(D) Redgram	(IV) Maharashtra

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

116 216 4.0 1.00

Match **List-I** with **List-II** pertaining to the nucleotides associated with cell metabolism in plants

List - I	**List - II**
(Biochemical reaction)	**(Associated Nucleotide)**
(A) Sucrose biosynthesis	(I) GTP
(B) Nitrite reduction	(II) NADPH
(C) Fatty acid biosynthesis	(III) $FADH_2$
(D) Substrate-level of phosphorylation in TCA cycle	(IV) UTP

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

117	217	Identify the crop plants based on the amount of water consumed per gram of CO_2 fixed: (A) Cowpea < Wheat < Redgram (B) Tomato < Pineapple < Sorghum (C) Pineapple < Maize < Rice (D) Soybean < Sugarcane < Brinjal Choose the ***correct*** answer from the options given below: 1. (A) and (B) only 2. (B) and (C) only 3. (C) only 4. (A) only	4.0	1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

118	218	Identify the nutrient elements in crop plants, capable of getting redistributed under deficiency conditions **in descending order:** 1. B > S > P 2. Ca > K > Fe 3. Fe > Ca > P 4. N > Fe > B	4.0	1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

119	219	Identify the synthetic inhibitors used in crop plants (A) Maleic Hydrazide (B) Chloromequat Chloride (C) Paclobutrazol (D) Triidobenzoic acid Choose the ***correct answer*** from the options given below: 1. (A) and (C) only 2. (A) and (D) only 3. (B), (C) and (D) only 4. (A), (B) and (C) only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
120	220	Most commonly used chemicals to break dormancy requiring light in seeds (of oats, lettuce, gladioulus etc.) are (A) Potassium nitrate (B) Kinetine (C) Thiourea (D) NAA Choose the ***correct*** answer from the options given below 1. (A), (B), (C) and (D) 2. (B), (C) and (D) only 3. (B) and (D) only 4. (A) and (C) only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00