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 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
3	103	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	4.0	1.00
Objective Question				

4	104	Match **List-I** with **List-II** **List-I** / **Molecule** (A) Aspartame (B) Glutathione (C) Oxytocin (D) Endomorphin **List-II** / **Type of peptide** (I) Tripeptide (II) Tetrapeptide (III) Nonapeptide (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	4.0	1.00

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 ? | 4.0 | 1.00

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

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	Match **List-I** with **List-II** **List-I** **Name of the enzyme** (A) 2,4-dienoyl-CoA reductase (B) Phytanoyl- CoA hydroxylase (C) Acyl-CoA oxidase (D) Cytochrome P450 **List-II** **Role in the fatty acid oxidation** (I) Involved in the α-oxidation of branched fatty acids formed from the degradation of side chain of the chlorophyll. (II) Involved in the oxidation of unsaturated fatty acids (III) Involved in the ω-oxidation of medium chain fatty acids in the endoplasmic reticulum (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	4.0	1.00

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	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	4.0	1.00
Objective Question				
16	116	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	4.0	1.00

Objective Question				
17	117	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	4.0	1.00
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	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	4.0	1.00
Objective Question				

20	120	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	4.0	1.00
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

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)

4.0 1.00

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	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	4.0	1.00
Objective Question				
29	129	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	4.0	1.00

A3 : 3

A4 : 4

Objective Question

30 130 Which of the following metabolites is not an intermediate in the triglyceride biosynthesis by Kennedy pathway? 4.0 1.00

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

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? 4.0 1.00

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

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 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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	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	4.0	1.00
Objective Question				
39	139	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	4.0	1.00
Objective Question				

40	140	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	4.0	1.00
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 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

44	144	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	4.0	1.00
Objective Question				
45	145	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	4.0	1.00
Objective Question				

46	146	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	4.0	1.00
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). A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

49 | 149 | 4.0 | 1.00

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

50 | 150 | 4.0 | 1.00

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)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51 151

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)

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

52	152	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	4.0	1.00
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 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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	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	4.0	1.00

Objective Question

60	160	What is the estimated size of Human genome? 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	4.0	1.00
Objective Question				
61	161	Which of the following is a multiple sequence alignment tool? 1. SCOP 2. PDB 3. GOLD 4. Clustal W A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

62	162	What is the first sequenced protein? 1. Insulin 2. Hemoglobin 3. Actin 4. Myosin A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

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	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	4.0	1.00
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	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	4.0	1.00

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 A4 : 4	4.0	1.00
Objective Question				

79	179	Match **List-I** with **List-II** **List-I** **(Book/Theory proposed/Characteristic, etc.)** (A) Orthologues (B) Splicing (C) Mass spectrometry (D) EMBL **List-II** **(Author/Thinker/Name of Theory, etc.)** (I) Removal of Introns (II) Protein fingerprinting (III) Nucleotide database (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		4.0	1.00

Objective Question

80	180	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	4.0	1.00
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 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

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 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
86	186	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	4.0	1.00
Objective Question				

87	187	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	4.0	1.00
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	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	4.0	1.00

Objective Question

90	190		4.0	1.00

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

List-I	**List-II**
(Growth regulators)	**(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	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	4.0	1.00
Objective Question				
92	192	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	4.0	1.00
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	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	4.0	1.00
Objective Question				
96	196	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	4.0	1.00
Objective Question				

97	197	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	4.0	1.00

Objective Question

98	198	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	4.0	1.00

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 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

104	204	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	4.0	1.00
Objective Question				
105	205	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	4.0	1.00
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 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
110	210	Seed dormancy is broken by mechanical scarification in this crop 1. Cotton 2. Castor 3. Coriander 4. Chickpea A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

111 211

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

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

112	212	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	4.0	1.00
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	Match **List-I** with **List-II** pertaining to the nucleotides associated with cell metabolism in plants	4.0	1.00

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 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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