

National Testing Agency

Question Paper Name :	PLANT BIOTECHNOLOGY 23rd Sep 2020 Shift 1 Set 2
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Plant Biotechnology

Group Number :	1
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Show Attended Group? :	No
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Break time :	0
Group Marks :	480
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Plant Biotechnology

Section Id :	2105297
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	120

Number of Questions to be attempted :	120
Section Marks :	480
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	2105297
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 210529301 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The pH of 10^{-8} M HCl solution will be

1. 8.00
2. 6.00
3. 6.96
4. 1.00

Options :

2105291201. 1
2105291202. 2
2105291203. 3
2105291204. 4

Question Number : 2 Question Id : 210529302 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The identification of specific DNA sequence by Southern Blotting involves the following procedures:

- A) Digestion of the DNA with a restriction enzyme
- B) Fractionation of DNA fragments
- C) Transfer of ssDNA molecules from gel to an absorbent sheet
- D) Hybridization of radioactively labelled probe to target DNA

What is the correct sequence in which these procedures are executed?

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

Options :

- 2105291205. 1
- 2105291206. 2
- 2105291207. 3
- 2105291208. 4

Question Number : 3 Question Id : 210529303 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A protein has eight cysteine residues. How many possible ways are there to make four disulfide bridges in its structure?

- 1. 105
- 2. 4096
- 3. 24
- 4. 1680

Options :

- 2105291209. 1

2105291210. 2

2105291211. 3

2105291212. 4

Question Number : 4 Question Id : 210529304 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following statements is true about the D-Glucose and D-Talose?

1. Both are enantiomeric pairs
2. Both are epimers
3. Both are merely diastereomers and not epimers
4. D-Glucose is an aldohexose while D-Talose is a ketopentose

Options :

2105291213. 1

2105291214. 2

2105291215. 3

2105291216. 4

Question Number : 5 Question Id : 210529305 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: The catalytic efficiency of an enzyme cannot exceed the diffusion-controlled rate of the combination of enzyme and substrate to form Enzyme-Substrate (ES) complex.

Statement II: The catalytic efficiency of an enzyme is defined by the ratio, K_{cat}/K_m

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

Options :

2105291217. 1

2105291218. 2

2105291219. 3

2105291220. 4

Question Number : 6 Question Id : 210529306 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Plant stanols are fully reduced forms of the plant sterols

Statement II: Plant stanols esterified with long-chain fatty acids can potentially lower the LDL cholesterol level in humans by effectively blocking the uptake of cholesterol

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

Options :

2105291221. 1

2105291222. 2

2105291223. 3

2105291224. 4

Question Number : 7 Question Id : 210529307 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Nitrate assimilation in plants occurs only in roots

Statement II: Plants transport the nitrite generated by nitrate reduction, immediately, from the cytosol into chloroplast because it is potentially toxic to the cells

In the 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

Options :

2105291225. 1

2105291226. 2

2105291227. 3

2105291228. 4

Question Number : 8 Question Id : 210529308 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Nitrogenase is a catalytically efficient and oxygen-insensitive enzyme

Statement II: The reduction of acetylene to ethylene cannot be used for the estimation of nitrogenase activity

In the 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

Options :

2105291229. 1

2105291230. 2

2105291231. 3

2105291232. 4

Question Number : 9 Question Id : 210529309 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: The cap present at the 5'-end of eukaryotic mRNAs is 7-methyl GTP

Statement II: The 5' cap of eukaryotic mRNAs is essential for their binding by eukaryotic ribosomes and it also enhances their stability

In the 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

Options :

- 2105291233. 1
- 2105291234. 2
- 2105291235. 3
- 2105291236. 4

Question Number : 10 Question Id : 210529310 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Majority of the t-RNA molecules have the following sequence at their 3'-end

1. CCA-3'-OH
2. CGA-3'-OH
3. GGA-3'-OH
4. AAA-3'-OH

Options :

- 2105291237. 1
- 2105291238. 2

2105291239. 3

2105291240. 4

Question Number : 11 Question Id : 210529311 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The symbol "Ψ" in the TΨC stem-loop of the t-RNA denotes which one of the following?

1. Pseudouridine
2. Thiouridine
3. Ribothymidine
4. Inosine

Options :

2105291241. 1

2105291242. 2

2105291243. 3

2105291244. 4

Question Number : 12 Question Id : 210529312 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following nucleosides has been shown to be functioning as a local hormone to control various physiological functions in humans?

1. Adenosine
2. Inosine
3. Guanosine
4. Cytidine

Options :

2105291245. 1

2105291246. 2

2105291247. 3

2105291248. 4

Question Number : 13 Question Id : 210529313 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The peptides containing which of the following amino acid are well suited for buffering the physiological pH?

1. Histidine
2. Tryptophan
3. Glycine
4. Cysteine

Options :

2105291249. 1

2105291250. 2

2105291251. 3

2105291252. 4

Question Number : 14 Question Id : 210529314 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Inulin is an oligosaccharide of great nutritional significance. It is formed from which one of the following monosaccharide(s)?

1. Fructose
2. Mannose
3. Idose
4. Mannose and Idose

Options :

2105291253. 1

2105291254. 2

2105291255. 3

2105291256. 4

Question Number : 15 Question Id : 210529315 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The 14-3-3 proteins are involved in the post-translational regulation of which one of the following enzymes of nitrogen metabolism?

1. Nitrite reductase
2. Nitrate reductase
3. Nitrogenase
4. Glutamine synthetase

Options :

2105291257. 1

2105291258. 2

2105291259. 3

2105291260. 4

Question Number : 16 Question Id : 210529316 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following sugars is/ are non-reducing?

1. Only Sucrose
2. Only Trehalose
3. Both Sucrose and Trehalose
4. Neither Sucrose nor Trehalose

Options :

2105291261. 1

2105291262. 2

2105291263. 3

2105291264. 4

Question Number : 17 Question Id : 210529317 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following is NOT a ketone body?

1. Acetone
2. Acetoacetate
3. β -hydroxy butyrate
4. Isobutyryl CoA

Options :

2105291265. 1

2105291266. 2

2105291267. 3

2105291268. 4

Question Number : 18 Question Id : 210529318 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The absorbance of 0.1 M solution (A) of a compound "X" is 0.5, when measured using a cuvette of 1 cm length. Another solution (B) of the same compound, with unknown concentration, gave an absorbance of 0.125 using same cuvette. What is the expected concentration of solution B?

1. 0.025 M
2. 0.1 M
3. 0.05 M
4. 0.4 M

Options :

2105291269. 1

2105291270. 2

2105291271. 3

2105291272. 4

Question Number : 19 Question Id : 210529319 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The activity of enzyme Pyruvate Dehydrogenase is regulated by which one of the following modifications?

1. Phosphorylation/Dephosphorylation
2. Carboxylation/Decarboxylation
3. Methylation/Demethylation
4. Glucosylation/Deglucosylation

Options :

2105291273. 1

2105291274. 2

2105291275. 3

2105291276. 4

Question Number : 20 Question Id : 210529320 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The α -helical structure of proteins are the result of formation of hydrogen bonds between which of the following amino acids in its primary structure?

1. n^{th} and $n + 4^{\text{th}}$
2. n^{th} and $n + 2^{\text{nd}}$
3. n^{th} and $n + 3^{\text{rd}}$
4. n^{th} and $n + 5^{\text{th}}$

Options :

2105291277. 1

2105291278. 2

2105291279. 3

2105291280. 4

Question Number : 21 Question Id : 210529321 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which type of RNA molecules make up more than 80% of the total RNA in the cell?

1. rRNA
2. mRNA
3. tRNA
4. SnRNA

Options :

2105291281. 1

2105291282. 2

2105291283. 3

2105291284. 4

Question Number : 22 Question Id : 210529322 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following post-translational modification of the proteins may tag them for degradation in 26S proteasome?

1. Polyubiquitination
2. Biotinylation
3. Prenylation
4. Myristoylation

Options :

2105291285. 1

2105291286. 2

2105291287. 3

2105291288. 4

Question Number : 23 Question Id : 210529323 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following reagents cannot be used for the determination of the N-terminus of the protein?

1. 2,4-Dinitro fluorobenzene
2. Dansyl chloride
3. Phenylisothiocyanate
4. Hydrazine

Options :

2105291289. 1

2105291290. 2

2105291291. 3

2105291292. 4

Question Number : 24 Question Id : 210529324 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A polyketide that inhibits the enzyme ATP synthase by blocking the movement of protons through its F_o unit is:

1. Oligomycin
2. Thermogenin
3. Dicumarol
4. Demerol

Options :

2105291293. 1

2105291294. 2

2105291295. 3

2105291296. 4

Question Number : 25 Question Id : 210529325 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following *E.coli* DNA polymerase possesses both 5'- and 3'- Exonucleolytic activity and is thus its own Proofreader and Editor?

1. DNA Polymerase I
2. DNA Polymerase II
3. DNA Polymerase III
4. DNA Polymerase €

Options :

2105291297. 1

2105291298. 2

2105291299. 3

2105291300. 4

Question Number : 26 Question Id : 210529326 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

How many protons are released on the cytoplasmic side of Inner Mitochondrial Membrane by complex III for every two protons taken up from its matrix side?

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

Options :

2105291301. 1

2105291302. 2

2105291303. 3

2105291304. 4

Question Number : 27 Question Id : 210529327 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The most active metabolite of Vitamin-D, which helps in the regulation of calcium and phosphorous metabolism is:

1. 1-hydroxy Cholecalciferol
2. 25-hydroxy Cholecalciferol
3. 1,25-dihydroxy Cholecalciferol
4. Ergocalciferol

Options :

2105291305. 1

2105291306. 2

2105291307. 3

2105291308. 4

Question Number : 28 Question Id : 210529328 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The fatty acids are converted into which one of the following volatile derivative for their separation by Gas-Liquid Chromatography (GLC)?

1. Fatty Acid Methyl esters (FAMES)
2. Fatty alcohols
3. Amide derivatives
4. Cyano derivatives

Options :

2105291309. 1

2105291310. 2

2105291311. 3

2105291312. 4

Question Number : 29 Question Id : 210529329 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following vitamins is required for the conversion of deoxyuridine diphosphate (dUDP) to deoxy thymidine diphosphate (dTDP)?

1. Riboflavin
2. Biotin
3. Folic acid
4. Thiamin

Options :

2105291313. 1

2105291314. 2

2105291315. 3

2105291316. 4

Question Number : 30 Question Id : 210529330 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following rhizobial Nod proteins is activated by flavonoids, secreted by the roots of the legume plants, and induces transcription of other nod genes after its activation?

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

Options :

2105291317. 1
2105291318. 2
2105291319. 3
2105291320. 4

Question Number : 31 Question Id : 210529331 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following sugars enters in the glycolysis via Leloir pathway?

1. Fructose
2. Mannose
3. Galactose
4. Deoxyribose

Options :

2105291321. 1
2105291322. 2
2105291323. 3
2105291324. 4

Question Number : 32 Question Id : 210529332 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

A student in a laboratory diluted 150 mL of 0.2 M acetic acid with 100 mL of 0.1 N NaOH in Beaker A and with 100 mL of water in Beaker B. The pH of the diluted acetic acid in two beakers will be

1. 4.46 in both the beakers
2. 2.84 in both the beakers
3. 4.46 in beaker A and 2.84 in beaker B
4. 2.84 in beaker A and 4.46 in beaker B

Options :

2105291325. 1

2105291326. 2

2105291327. 3

2105291328. 4

Question Number : 33 Question Id : 210529333 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The linking number (L) of a supercoiled duplex DNA can be equated to its Twist (T) and Writhe (W) by which one of the following expression?

1. $L = T + W$

2. $L = T/W$

3. $L = T \times W$

4. $L = T - W$

Options :

2105291329. 1

2105291330. 2

2105291331. 3

2105291332. 4

Question Number : 34 Question Id : 210529334 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: In erythrocytes, seven of the glycolytic reactions operate near equilibrium

Statement II: The driving force for the glycolysis lies in the reactions which are operating near-equilibrium

In the 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

Options :

- 2105291333. 1
- 2105291334. 2
- 2105291335. 3
- 2105291336. 4

Question Number : 35 Question Id : 210529335 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Ubiquinone is a lipid-soluble mobile electron carrier commonly referred to as "Coenzyme Q"

Statement II: Ubiquinone acts as an electron sink which links transfer of electrons from both NADH and FADH₂ to the next complex in the Electron Transport Chain

In the 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

Options :

- 2105291337. 1
- 2105291338. 2
- 2105291339. 3
- 2105291340. 4

Question Number : 36 Question Id : 210529336 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Tumor cells can be identified in PET scan as sites of unusually high 2-[¹⁸F] fluoro-2-deoxyglucose (FDG) accumulation, as

1. Glycolysis occurs at a very high rate in these cells as compared to the normal cells
2. Glycolysis occurs at a very low rate in these cells as compared to the normal cells
3. Fluorine inhibits TCA cycle in tumorous cells
4. FDG is not acted upon by the hexokinase enzyme

Options :

2105291341. 1
2105291342. 2
2105291343. 3
2105291344. 4

Question Number : 37 Question Id : 210529337 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In Hanes-Woolf Plot, graphing of $[S]/v$ versus $[S]$ yields a straight line whose slope and Y-intercept respectively are:

1. K_m/V_{max} and $1/V_{max}$
2. K_m/V_{max} and $-K_m$
3. $1/V_{max}$ and $-1/K_m$
4. $1/V_{max}$ and K_m/V_{max}

Options :

2105291345. 1
2105291346. 2
2105291347. 3
2105291348. 4

Question Number : 38 Question Id : 210529338 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following is a ω (Omega) -9 fatty acid?

1. Erucic acid
2. Palmitoleic acid
3. Gamma-Linolenic acid
4. Eicosapentenoic acid

Options :

2105291349. 1

2105291350. 2

2105291351. 3

2105291352. 4

Question Number : 39 Question Id : 210529339 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The Vesicular Arbuscular Mycorrhiza genus, which plays an important role in P-cycling and its uptake, is

1. *Penicillium*
2. *Aspergillus*
3. *Bacillus*
4. *Glomus*

Options :

2105291353. 1

2105291354. 2

2105291355. 3

2105291356. 4

Question Number : 40 Question Id : 210529340 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In general, the depth of irrigation water needed per irrigation to irrigate 1 meter depth of clay loam soil profile at 50% soil-moisture availability is

1. 20-30 mm
2. 45-80 mm
3. 80-120 mm
4. 120-140 mm

Options :

2105291357. 1

2105291358. 2

2105291359. 3

2105291360. 4

Question Number : 41 Question Id : 210529341 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Chromosomes are relaxed to the maximum at

1. Interphase
2. Telophase
3. Metaphase
4. Prophase

Options :

2105291361. 1

2105291362. 2

2105291363. 3

2105291364. 4

Question Number : 42 Question Id : 210529342 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Polyploid with multiple complete genomes derived from two or more different species is

1. Allopolyploid
2. Autopolyploid
3. Aneuploid
4. Synthetic autopolyploid

Options :

2105291365. 1

2105291366. 2

2105291367. 3

2105291368. 4

Question Number : 43 Question Id : 210529343 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The sequence of amino acids in a protein during translation process is determined by

1. Codons on DNA
2. rRNA species
3. tRNA anticodons
4. mRNA codons

Options :

2105291369. 1

2105291370. 2

2105291371. 3

2105291372. 4

Question Number : 44 Question Id : 210529344 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The water quality is categorized "Excellent" for irrigation when the chloride concentration (in meq L⁻¹) is

1. Less than 4
2. 4-7
3. 7-12
4. Above 12

Options :

2105291373. 1

2105291374. 2

2105291375. 3

2105291376. 4

Question Number : 45 Question Id : 210529345 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The crop plant tolerant to available iron in soils is

1. Brinjal
2. Sugarbeet
3. Citrus
4. Guava

Options :

2105291377. 1

2105291378. 2

2105291379. 3

2105291380. 4

Question Number : 46 Question Id : 210529346 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The database used by the ENTREZ for bibliographic search is

1. PDB
2. PubMed
3. TrEMBL
4. SWISS-PROT

Options :

2105291381. 1

2105291382. 2

2105291383. 3

2105291384. 4

Question Number : 47 Question Id : 210529347 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question

Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A molecular marker that samples genome in a random and genome-wide manner is

1. CAPS
2. SNP
3. RAPD
4. SSR

Options :

2105291385. 1

2105291386. 2

2105291387. 3

2105291388. 4

Question Number : 48 Question Id : 210529348 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question

Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Primary role of post-transcriptional modifications such as 5'capping and 3'poly (A) tailing of mRNA is

1. Precision of translation
2. Stability
3. Transport to cytoplasm
4. Relative expression of the gene

Options :

2105291389. 1

2105291390. 2

2105291391. 3

2105291392. 4

Question Number : 49 Question Id : 210529349 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question

Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

An enzyme involved in initiation of DNA synthesis during replication is

1. Telomerase
2. Holoenzyme
3. RNA primase
4. Endonuclease

Options :

- 2105291393. 1
- 2105291394. 2
- 2105291395. 3
- 2105291396. 4

Question Number : 50 Question Id : 210529350 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The DNA replication in prokaryotes is of

1. Semi-conservative type
2. Conservative type
3. Disruptive type
4. Semi-disruptive type

Options :

- 2105291397. 1
- 2105291398. 2
- 2105291399. 3
- 2105291400. 4

Question Number : 51 Question Id : 210529351 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

^{35}S isotope is commonly used in experiments involving which of the following biomolecules?

1. Nucleic acids
2. Proteins
3. Carbohydrates
4. Fats and oils

Options :

- 2105291401. 1
- 2105291402. 2
- 2105291403. 3
- 2105291404. 4

Question Number : 52 Question Id : 210529352 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The viruses that infect bacteria are called

1. Cosmids
2. Plasmids
3. Bacteriophages
4. Mycoplasma

Options :

- 2105291405. 1
- 2105291406. 2
- 2105291407. 3
- 2105291408. 4

Question Number : 53 Question Id : 210529353 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The plant cellular organelles that contribute to the extra-chromosomal inheritance are

1. Nucleus
2. Mitochondria
3. Chloroplast and nucleus
4. Mitochondria and chloroplast

Options :

- 2105291409. 1
- 2105291410. 2
- 2105291411. 3
- 2105291412. 4

Question Number : 54 Question Id : 210529354 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The enzyme involved in removal of RNA primer in DNA replication process is

1. DNA polymerase
2. DNA primase
3. Endonuclease
4. RNA polymerase

Options :

- 2105291413. 1
- 2105291414. 2
- 2105291415. 3
- 2105291416. 4

Question Number : 55 Question Id : 210529355 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which of the following are Bioinformatics databases?

- A. ENTREZ
- B. BLAST
- C. SWISS-PROT
- D. GenBank

Select the most appropriate answer from the options given below

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

Options :

- 2105291417. 1
- 2105291418. 2
- 2105291419. 3
- 2105291420. 4

Question Number : 56 Question Id : 210529356 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The vector that could be used in two different systems/ hosts are called

- 1. Cosmids
- 2. Phagemids
- 3. Shuttle vectors
- 4. Plasmids

Options :

- 2105291421. 1

2105291422. 2

2105291423. 3

2105291424. 4

Question Number : 57 Question Id : 210529357 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which of the following is NOT the most commonly used marker gene for plant transformation?

1. *Nopaline synthase (nos)*
2. *β -glucouronidase (gus)*
3. *Luciferase (lux)*
4. *Cry1Ac gene*

Options :

2105291425. 1

2105291426. 2

2105291427. 3

2105291428. 4

Question Number : 58 Question Id : 210529358 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

First commercialized transgenic crop/variety was

1. Bollgard
2. Flavr savr
3. Liberty link
4. Bt brinjal

Options :

2105291429. 1

2105291430. 2

2105291431. 3

2105291432. 4

Question Number : 59 Question Id : 210529359 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Transgenic papaya variety 'Rainbow' is resistant to

1. PRSV
2. Aphids
3. Fruit rot
4. Delayed fruit ripening

Options :

2105291433. 1

2105291434. 2

2105291435. 3

2105291436. 4

Question Number : 60 Question Id : 210529360 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The *in vitro* 'slow growth culture' is a method used for

1. Genetic transformation
2. Conservation of plant genetic resources
3. Induction of somaclonal variation
4. Elimination of latent contamination

Options :

2105291437. 1

2105291438. 2

2105291439. 3

2105291440. 4

Question Number : 61 Question Id : 210529361 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A doubled haploid (DH) plant is

1. Always vigorous
2. Cent per cent homozygous
3. Cent per cent heterozygous
4. Always true breeding in cross pollinated species

Options :

2105291441. 1

2105291442. 2

2105291443. 3

2105291444. 4

Question Number : 62 Question Id : 210529362 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The gene that expresses all the time and keeps-up cellular processes are called

1. Oncogenes
2. Progenes
3. Housekeeping genes
4. Mutagenes

Options :

2105291445. 1

2105291446. 2

2105291447. 3

2105291448. 4

Question Number : 63 Question Id : 210529363 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question

Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The epigenetic modification, which regulates gene expression is

1. DNA methylation
2. Polyadenylation
3. Splicing of hnRNA
4. 5'capping of mRNA

Options :

2105291449. 1

2105291450. 2

2105291451. 3

2105291452. 4

Question Number : 64 Question Id : 210529364 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question

Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A nucleic acid molecule is a linear polymer in which the monomers- nucleotides are linked together by

1. Hydrophobic interactions
2. Ionic bonds
3. Phosphodiester bonds
4. Hydrogen bonds

Options :

2105291453. 1

2105291454. 2

2105291455. 3

2105291456. 4

Question Number : 65 Question Id : 210529365 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question

Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The type of proteins that are involved in higher order coiling of DNA post-nucleosome stage are

1. Glycoproteins
2. Histones
3. Non-histones
4. Metalloproteins

Options :

- 2105291457. 1
- 2105291458. 2
- 2105291459. 3
- 2105291460. 4

Question Number : 66 Question Id : 210529366 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Nobel Prize was awarded to Fire and Melo for the discovery of

1. CRISPR-Cas 9
2. T-DNA
3. Somaclonal variation
4. RNA interference

Options :

- 2105291461. 1
- 2105291462. 2
- 2105291463. 3
- 2105291464. 4

Question Number : 67 Question Id : 210529367 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Energy bonds in double helix structure of DNA, which are responsible for holding the two strands together are:

1. Covalent bonds
2. Sulfur bonds
3. Hydrogen bonds
4. Zinc finger motifs

Options :

- 2105291465. 1
- 2105291466. 2
- 2105291467. 3
- 2105291468. 4

Question Number : 68 Question Id : 210529368 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The chromosome complement of $2n-2$ is

1. Monosomy
2. Trisomy
3. Nullisomy
4. Double nullisomy

Options :

- 2105291469. 1
- 2105291470. 2
- 2105291471. 3
- 2105291472. 4

Question Number : 69 Question Id : 210529369 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Resistance development by some weeds against specific weedicide is due to

1. Gene mutation
2. Elevated expressivity of genes
3. Genetic recombination
4. Favorable environmental conditions

Options :

2105291473. 1

2105291474. 2

2105291475. 3

2105291476. 4

Question Number : 70 Question Id : 210529370 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The bioinformatics tool used to identify microsatellites (repeated motifs) in a genome is

1. Primer 3 plus
2. MISA
3. Codon-code-aligner
4. SNP digger

Options :

2105291477. 1

2105291478. 2

2105291479. 3

2105291480. 4

Question Number : 71 Question Id : 210529371 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Nucleotides differ from nucleosides with respect to

1. Sugar
2. Phosphate
3. Nitrogen base
4. Sugar and nitrogen base

Options :

2105291481. 1

2105291482. 2

2105291483. 3

2105291484. 4

Question Number : 72 Question Id : 210529372 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The natural mode of exchange of genetic material in bacteria is

1. Transduction
2. Conjugation
3. Mutation
4. Electroporation

Options :

2105291485. 1

2105291486. 2

2105291487. 3

2105291488. 4

Question Number : 73 Question Id : 210529373 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

An example of a model crop in molecular biology is

1. Wheat
2. Pigeon pea
3. Cowpea
4. Rice

Options :

- 2105291489. 1
- 2105291490. 2
- 2105291491. 3
- 2105291492. 4

Question Number : 74 Question Id : 210529374 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The country that deregulated 'Golden rice' recently to address the deficiency of vitamin A is

1. India
2. Philippines
3. Indonesia
4. Bangladesh

Options :

- 2105291493. 1
- 2105291494. 2
- 2105291495. 3
- 2105291496. 4

Question Number : 75 Question Id : 210529375 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The transfer DNA (T-DNA) portion of Ti plasmid contains genes for

1. Virulence and hormones
2. Virulence and CDK
3. Opines and Virulence
4. Hormones and Opines

Options :

- 2105291497. 1
- 2105291498. 2
- 2105291499. 3
- 2105291500. 4

Question Number : 76 Question Id : 210529376 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Cryopreservation of plant material using liquid nitrogen (-196 °C) for conservation eventualities is a

1. Long-term strategy
2. Short term
3. Ad hoc strategy
4. Medium term strategy

Options :

- 2105291501. 1
- 2105291502. 2
- 2105291503. 3
- 2105291504. 4

Question Number : 77 Question Id : 210529377 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Correcting a genetic disorder by the way of introduction of normal gene in place of a missing or defective one is referred to as

1. Gene therapy
2. Gene conversion
3. Gene donation
4. Gene regulation

Options :

- 2105291505. 1
- 2105291506. 2
- 2105291507. 3
- 2105291508. 4

Question Number : 78 Question Id : 210529378 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A cluster of genes under the control of a single promoter is called

1. Operator
2. Operon
3. Oncogene
4. ORF

Options :

- 2105291509. 1
- 2105291510. 2
- 2105291511. 3
- 2105291512. 4

Question Number : 79 Question Id : 210529379 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

A bio-molecular complex composed of four peptides – two identical light chains and two identical heavy chains is called

1. Hapten
2. Antibody
3. Serum
4. Antigen

Options :

2105291513. 1
2105291514. 2
2105291515. 3
2105291516. 4

Question Number : 80 Question Id : 210529380 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

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

List I	List II
A. <i>uidA</i>	I. Insecticidal gene
B. <i>Cry1Ac</i>	II. Drought tolerance
C. Bt brinjal	III. β -glucuronidase
D. <i>DREB gene</i>	IV. Fruit and Shoot Borer resistant

Choose the correct answer from the options given below:

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

Options :

2105291517. 1

2105291518. 2

2105291519. 3

2105291520. 4

Question Number : 81 Question Id : 210529381 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Diffusion of water into the protoplasm contributes to which component of water potential of plant cells?

1. Solute potential
2. Pressure potential
3. Matric potential
4. Gravitational potential

Options :

2105291521. 1

2105291522. 2

2105291523. 3

2105291524. 4

Question Number : 82 Question Id : 210529382 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The most abundant compound(s) that is transported through sieve tubes is

1. Amino acids
2. Organic acids
3. Proteins
4. Sucrose

Options :

2105291525. 1

2105291526. 2

2105291527. 3

2105291528. 4

Question Number : 83 Question Id : 210529383 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The instrument used for the measurement of water potential of plant tissues is

1. Hygrometer
2. Porometer
3. Pressure chamber
4. Infra-red gas analyzer

Options :

2105291529. 1

2105291530. 2

2105291531. 3

2105291532. 4

Question Number : 84 Question Id : 210529384 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

For thinning in apples, the growth regulator used commercially is

1. NAA
2. 2,4-D
3. Ethrel
4. GA3

Options :

2105291533. 1

2105291534. 2

2105291535. 3

2105291536. 4

Question Number : 85 Question Id : 210529385 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

An example of crop where the reserve food material in seeds is stored in endosperm is

1. Groundnut
2. Castor
3. Pigeonpea
4. Chickpea

Options :

2105291537. 1

2105291538. 2

2105291539. 3

2105291540. 4

Question Number : 86 Question Id : 210529386 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The most abundant protein found in biosphere is:

1. Rubisco
2. Peptase
3. PEP carboxylase
4. Kinase

Options :

2105291541. 1

2105291542. 2

2105291543. 3

2105291544. 4

Question Number : 87 Question Id : 210529387 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The crop plant with the highest amount of water requirement is

1. Wheat
2. Maize
3. Cotton
4. Sugarcane

Options :

2105291545. 1
2105291546. 2
2105291547. 3
2105291548. 4

Question Number : 88 Question Id : 210529388 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The plant hormone that activates many defense responses is

1. Linolenic acid
2. Shikimic acid
3. Jasmonic acid
4. Linoleic acid

Options :

2105291549. 1
2105291550. 2
2105291551. 3
2105291552. 4

Question Number : 89 Question Id : 210529389 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Calvin's group used the following plant to identify the intermediates in C_3 pathway:

1. *Arabidopsis*
2. *Chlorella*
3. Garden pea
4. Alfalfa

Options :

- 2105291553. 1
- 2105291554. 2
- 2105291555. 3
- 2105291556. 4

Question Number : 90 Question Id : 210529390 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The term "Biological Yield" is given by

1. West, Briggs and Kid
2. Watson
3. Blackman VS
4. Nichiporovich

Options :

- 2105291557. 1
- 2105291558. 2
- 2105291559. 3
- 2105291560. 4

Question Number : 91 Question Id : 210529391 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The biosynthetic pathway of chlorophyll begins with the compound

1. Mevalonic acid
2. Methionine
3. Serine
4. Glutamic acid

Options :

2105291561. 1
2105291562. 2
2105291563. 3
2105291564. 4

Question Number : 92 Question Id : 210529392 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The unit of Leaf Area Index (LAI) is

1. $\text{m}^2 \text{g}^{-1}$
2. g m^2
3. g g^{-1}
4. Dimension less

Options :

2105291565. 1
2105291566. 2
2105291567. 3
2105291568. 4

Question Number : 93 Question Id : 210529393 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The growth rate, which is also called as Efficiency Index, is

1. Crop Growth Rate (CGR)
2. Net Assimilation Rate (NAR)
3. Absolute Growth Rate (AGR)
4. Relative Growth Rate (RGR)

Options :

- 2105291569. 1
- 2105291570. 2
- 2105291571. 3
- 2105291572. 4

Question Number : 94 Question Id : 210529394 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following organelles contains enzymes that help in converting stored fatty acids into sugars in germinating seeds?

1. Dictyosomes
2. Oleosomes
3. Mitochondria
4. Glyoxysomes

Options :

- 2105291573. 1
- 2105291574. 2
- 2105291575. 3
- 2105291576. 4

Question Number : 95 Question Id : 210529395 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In vegetative tissues and seeds, phosphorous is stored in the form of :

1. Glutein
2. Phytin
3. Calmodulin
4. Zein

Options :

2105291577. 1

2105291578. 2

2105291579. 3

2105291580. 4

Question Number : 96 Question Id : 210529396 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

In photosystem-I (PS-I) the pigment molecules absorb maximum light at:

1. 660 nm
2. 680 nm
3. 700 nm
4. 720 nm

Options :

2105291581. 1

2105291582. 2

2105291583. 3

2105291584. 4

Question Number : 97 Question Id : 210529397 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Some plants have solar-tracking mechanisms and such mechanisms of bending towards sunlight is referred to as

1. Gravitropism
2. Heliotropism
3. Photoperiodism
4. Phototropism

Options :

- 2105291585. 1
- 2105291586. 2
- 2105291587. 3
- 2105291588. 4

Question Number : 98 Question Id : 210529398 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Scientist who had given the name mitochondria:

1. Richard Altman
2. Carl Benda
3. Andreas Schimper
4. George Palade

Options :

- 2105291589. 1
- 2105291590. 2
- 2105291591. 3
- 2105291592. 4

Question Number : 99 Question Id : 210529399 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which one of the following plants does NOT belong to the family of CAM plants?

1. Pineapple
2. Agave
3. Sugarcane
4. Cacti

Options :

2105291593. 1
2105291594. 2
2105291595. 3
2105291596. 4

Question Number : 100 Question Id : 210529400 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The empirical formula of the chlorophyll molecule is:

1. $C_{55} H_{72} O_5 N_4 Mg$
2. $C_{55} H_{70} O_6 N_4 Mg$
3. $C_{50} H_{72} O_5 N_4 Mg$
4. $C_{50} H_{70} O_6 N_4 Mg$

Options :

2105291597. 1
2105291598. 2
2105291599. 3
2105291600. 4

Question Number : 101 Question Id : 210529401 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The first step of Calvin cycle in C₄ plant is:

1. Carboxylation
2. Regeneration
3. Protonation
4. Reduction

Options :

- 2105291601. 1
- 2105291602. 2
- 2105291603. 3
- 2105291604. 4

Question Number : 102 Question Id : 210529402 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following crop genotypes exhibits the dimorphic structure of leaf called Kranz anatomy?

1. Rice
2. Tomato
3. Groundnut
4. Sugarcane

Options :

- 2105291605. 1
- 2105291606. 2
- 2105291607. 3
- 2105291608. 4

Question Number : 103 Question Id : 210529403 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The H-O-H bond angle in water is :

1. 103°
2. 104.5°
3. 106°
4. 107.5°

Options :

2105291609. 1
2105291610. 2
2105291611. 3
2105291612. 4

Question Number : 104 Question Id : 210529404 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The process that operates in a diametrically opposite direction to CO_2 fixation leading to a loss of photosynthetically fixed CO_2 is

1. Dark respiration
2. Photorespiration
3. Oxidative phosphorylation
4. De-carboxylation

Options :

2105291613. 1
2105291614. 2
2105291615. 3
2105291616. 4

Question Number : 105 Question Id : 210529405 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Oxidation of one glucose molecule under anaerobic respiration gives:

1. 2 ATP
2. 8 ATP
3. 30 ATP
4. 36 ATP

Options :

2105291617. 1
2105291618. 2
2105291619. 3
2105291620. 4

Question Number : 106 Question Id : 210529406 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following hormone functions as a "*morphogen*" during embryogenesis?

1. Auxin
2. Cytokinin
3. Abscisic acid
4. Ethylene

Options :

2105291621. 1
2105291622. 2
2105291623. 3
2105291624. 4

Question Number : 107 Question Id : 210529407 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following plant hormones can induce flowering in pineapple?

1. Abscisic acid
2. Gibberellins
3. Brassinosteroid
4. Ethylene

Options :

2105291625. 1
2105291626. 2
2105291627. 3
2105291628. 4

Question Number : 108 Question Id : 210529408 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The place or site of oxidative phosphorylation in plant cell is

1. Matrix of mitochondria
2. Inner mitochondrial membrane
3. Cytoplasm of cells
4. Outer mitochondrial membrane

Options :

2105291629. 1
2105291630. 2
2105291631. 3
2105291632. 4

Question Number : 109 Question Id : 210529409 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

Which one of the following nutrient element remains in ionic form and is the main cation in establishing plant cell turgor?

1. Potassium
2. Phosphorus
3. Boron
4. Sulfur

Options :

2105291633. 1
2105291634. 2
2105291635. 3
2105291636. 4

Question Number : 110 Question Id : 210529410 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Urease catalyzes hydrolysis of urea to CO_2 and NH_4^+ . Which of the following elements is an essential part of urease?

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

Options :

2105291637. 1
2105291638. 2
2105291639. 3
2105291640. 4

Question Number : 111 Question Id : 210529411 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which one of the following CANNOT be considered as a Climacteric fruit?

1. Citrus
2. Banana
3. Mango
4. Apple

Options :

2105291641. 1
2105291642. 2
2105291643. 3
2105291644. 4

Question Number : 112 Question Id : 210529412 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The common bio-assay used to detect the hormone brassinosteroid is

1. Dwarf rice lamina inclination bio-assay
2. Cucumber cotyledon expansion bio-assay
3. Triple response bio-assay in etiolated seedling
4. Oat coleoptile elongation bio-assay

Options :

2105291645. 1
2105291646. 2
2105291647. 3
2105291648. 4

Question Number : 113 Question Id : 210529413 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 4 Wrong Marks : 1

The crops that flower when the day length exceeds a critical duration in a 24-hour cycle are called

1. Short-day plants
2. Long-day plants
3. Day-neutral plants
4. Sort-long-day plants

Options :

2105291649. 1
2105291650. 2
2105291651. 3
2105291652. 4

Question Number : 114 Question Id : 210529414 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Light is the signal that controls stomatal movement in plants. The stomatal opening is stimulated by

1. Red light
2. Blue light
3. Green light
4. Yellow light

Options :

2105291653. 1
2105291654. 2
2105291655. 3
2105291656. 4

Question Number : 115 Question Id : 210529415 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The water potential of pure water is always:

1. -1.0 MPa
2. 0.0 MPa
3. +1.0 MPa
4. Infinite MPa

Options :

2105291657. 1
2105291658. 2
2105291659. 3
2105291660. 4

Question Number : 116 Question Id : 210529416 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

In plant cells non-pigmented plastids are called

1. Chloroplast
2. Leucoplast
3. Amyloplast
4. Chromoplast

Options :

2105291661. 1
2105291662. 2
2105291663. 3
2105291664. 4

Question Number : 117 Question Id : 210529417 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

The reaction " $\text{NO}_3^- + \text{NAD(P)H} + \text{H}^+ + 2\text{e}^- \rightarrow \text{NO}_2^- + \text{NAD(P)} + \text{H}_2\text{O}$ " is catalyzed by the enzyme

1. Nitrate reductase
2. Nitrite reductase
3. Glutamate synthase
4. Aminotransferase

Options :

- 2105291665. 1
- 2105291666. 2
- 2105291667. 3
- 2105291668. 4

Question Number : 118 Question Id : 210529418 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

Which one of the following elements can cause necrosis of the young meristematic region, when present in insufficient amounts for plant physiological processes?

1. Calcium
2. Potassium
3. Phosphorus
4. Magnesium

Options :

- 2105291669. 1
- 2105291670. 2
- 2105291671. 3
- 2105291672. 4

Question Number : 119 Question Id : 210529419 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

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

List I	List II
A. Chlorine	I. Auxin Biosynthesis
B. Magnesium	II. Oxygen evolution at Photosystem II
C. Iron	III. Protein and ATP synthesis
D. Zinc	IV. Synthesis of the chlorophyll precursor molecule

Choose the correct answer from the options given below:

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

Options :

- 2105291673. 1
- 2105291674. 2
- 2105291675. 3
- 2105291676. 4

Question Number : 120 Question Id : 210529420 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 4 Wrong Marks : 1

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

List I	List II
A. National Institute for Rural Development	I. Coimbatore
B. Central Agricultural University	II. Hyderabad
C. ICAR - Sugarcane Breeding Institute	III. Raipur
D. ICAR - National Institute of Biotic Stress Management	IV. Imphal

Choose the correct answer from the options given below:

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

Options :

2105291677. 1
2105291678. 2
2105291679. 3
2105291680. 4