National Testing Agency

Question Paper Name :	Genetics and Plant Breeding 23rd Sep 2020 Shift 2 Set 2
Subject Name :	Genetics and Plant Breeding
Creation Date :	2020-09-23 19:33:32
Duration :	120
Total Marks :	480
Display Marks:	Yes
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes

Genetics and Plant Breeding

Group Number :	1
Group Id :	7108703
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	480
Is this Group for Examiner? :	No

Part A General Knowledge

Section Id :	7108707
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20

Number of Questions to be attempted :	20
Section Marks :	80
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	7108707
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 710870301 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 crops is a commercial crop in Punjab and Haryana but is a subsistence crop in Orissa?

1. Tea
2. Cotton
3. Rubber
4. Rice

Options :
7108701201. 1
7108701202. 2
7108701203. 3
7108701204. 4

Question Number : 2 Question Id : 710870302 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 the two most important wheat-growing zones of the country?

A. Ganga-Satluj plains in the north-west

B. Deltaic regions

C. Black soil region of the Deccan

D. Plains of north-east

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

1. Only A and B
2. Only B and C
3. Only C and D
4. Only A and C

Options :

7108701205. 1
7108701206. 2
7108701207. 3
7108701208. 4

Question Number : 3 Question Id : 710870303 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

Indian agriculture is typically characterized as

1. Land surplus, labour scarce economy
2. Land surplus, labour surplus economy
3. Land scarce, labour surplus economy
4. Land scarce, labour scarce economy

Options :

7108701209. 1

7108701210. 2
7108701211. 3
7108701212. 4

Question Number : 4 Question Id : 710870304 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 countries is the main rival of India in tea export?

1. China
2. Japan
3. Germany
4. Sri Lanka

Options :
7108701213. 1
7108701214. 2
7108701215. 3
7108701216. 4

Question Number : 5 Question Id : 710870305 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 A: MSP is declared by the government every year to provide incentives to the farmers for raising the production of crops.

Statement B: Buffer stock is created to distribute food grains in the deficit areas and among the poorer strata of the society at the lower price than the market price.

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

1. Both Statement A and Statement B are correct
2. Both Statement A and Statement B are incorrect
3. Statement A is correct but Statement B is incorrect
4. Statement A is incorrect but Statement B is correct

Options :
7108701217. 1
7108701218. 2
7108701219. 3
7108701220. 4

Question Number : 6 Question Id : 710870306 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 is a global association of nations of the world to help cooperation in international law, security, economic development and social equity?

1. United Nations Organization
2. International Monetary Fund
3. World Bank
4. World Health Organization

Options :
7108701221. 1
7108701222. 2
7108701223. 3
7108701224. 4

Question Number : 7 Question Id : 710870307 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

Under the Ganga Action Plan Phase II, pollution abatement works are being taken up in how many towns?

1. 57
2. 65
3. 52
4. 69

Options :
7108701225. 1
7108701226. 2
7108701227. 3
7108701228. 4

Question Number : 8 Question Id : 710870308 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 statements is **incorrect**?

1. The highest number of pigs in the world are found in India
2. Utter Pradesh provides largest amount of pork
3. Assam has the largest number of pork producing pigs
4. Pork constitutes about 7.6% of the total meat produced in India

Options :

7108701229. 1
7108701230. 2
7108701231. 3
7108701232. 4

Question Number : 9 Question Id : 710870309 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 N-fertilizer is suitable for water-logged soils?

1. Zinc Phosphate
2. Ammonium Sulphate
3. Calcium
4. Potassium Nitrate

Options :
7108701233. 1
7108701234. 2
7108701235. 3
7108701236. 4

Question Number : 10 Question Id : 710870310 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 famous Bailadila range of hills in the Bastar district of Chhattisgarh is famous for its

1. Bauxite deposits
2. Manganese deposits
3. Copper deposits
4. High-grade haematite deposits

Options :
7108701237. 1

7108701238. 2
7108701239. 3
7108701240. 4

Question Number : 11 Question Id : 710870311 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 farmer wishes to start a 100 sq. m rectangular vegetable garden. Since he has only 30m barbed wire, he fences three sides of the garden letting his house compound wall act as the fourth side fencing. What is the dimension of the garden?

1. 15 m x 6.67m
2. 20 m x 5 m
3. 30 m x 3.33 m
4. 40 m x 2.5 m

Options :
7108701241. 1
7108701242. 2
7108701243. 3
7108701244. 4

Question Number : 12 Question Id : 710870312 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 which one of the following industries, the consumption of natural rubber is the largest?

1. Auto tyres and tubes
2. Footwear
3. Dipped goods
4. Latex foam

Options :

7108701245. 1
7108701246. 2
7108701247. 3
7108701248. 4

Question Number : 13 Question Id : 710870313 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 countries was the partner country of 34th Surajkund International Crafts Fair held in Haryana?

1. China
2. Nepal
3. Bhutan
4. Uzbekistan

Options :
7108701249. 1
7108701250. 2
7108701251. 3
7108701252. 4

Question Number : 14 Question Id : 710870314 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 laureate Abhijit Vinayak Banerjee was conferred the honorary Doctor of Letters (D. Litt.) by which University?

1. University of Delhi
2. University of Kolkata
3. University of Mumbai
4. University of Hyderabad

Options :
7108701253. 1
7108701254. 2
7108701255. 3
7108701256. 4

Question Number : 15 Question Id : 710870315 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

Where is the headquarters of European Union?

1. Geneva, Switzerland
2. Washington D.C., USA
3. New York, US
4. Brussels, Belgium

Options :
7108701257. 1
7108701258. 2
7108701259. 3
7108701260. 4

Question Number : 16 Question Id : 710870316 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 would be deficient if one finds high somatic cell count in the cow's milk?

1. Butterfat
2. Whey protein
3. Casein
4. Trace minerals

Options :
7108701261. 1
7108701262. 2
7108701263. 3
7108701264. 4

Question Number : 17 Question Id : 710870317 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

Who was the first administrator-statesman to attempt planning as a means for economic development?

1. C. Rajagopalachari
2. V. T. Krishnamachari
3. M. Viswesvarayya
4. Sir C. P. Ramaswami Aiyyar

Options :
7108701265. 1
7108701266. 2
7108701267. 3
7108701268. 4

Question Number : 18 Question Id : 710870318 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

Amazon rainforest span over nine countries. In August 2019, in which country did a deadly fire broke out in the Amazon forest?

1. Brazil
2. Venezuela
3. Colombia
4. Argentina

Options :
7108701269. 1
7108701270. 2
7108701271. 3
7108701272. 4

Question Number : 19 Question Id : 710870319 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

Economic liberalization in India started with

1. Sustainable changes in industrial licensing policy
2. The convertibility of the Indian Rupee
3. Significant reduction of tax rates
4. Changes in procedural formalities for FDI

Options :
7108701273. 1
7108701274. 2
7108701275. 3
7108701276. 4

Question Number : 20 Question Id : 710870320 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 'Delimitation' which was in news recently is associated with which process?

1. Fixing the limit of Income tax
2. Fixing limits of Affordable housing
3. Fixing limits of Territorial constituencies
4. Fixing limits of Chairpersons salary

Options :
7108701277. 1

7108701278. 2
7108701279. 3
7108701280. 4

Part B Core Crop Sciences-I

Section Id :	7108708
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	7108708
Question Shuffling Allowed :	Yes

Question Number : 21 Question Id : 710870321 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 translation process occurs in association with which one of the following?

1. Plastids
2. ER
3. Mitochondria
4. Ribosome and RNA

Options :
7108701281. 1
7108701282. 2

7108701283. 3
7108701284. 4

Question Number : 22 Question Id : 710870322 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

E. R. Sears produced 21 monosomics in which one of the following wheat varieties?

1. Einkorn
2. Chinese spring
3. Khorasan
4. Red spring

Options :

7108701285. 1
7108701286. 2
7108701287. 3
7108701288. 4

Question Number : 23 Question Id : 710870323 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

Name the small cDNA sequence that represents a unique segment of an active gene

1. SNPs
2. snRNAs
3. ESTs
4. Contigs

Options :

7108701289. 1
7108701290. 2
7108701291. 3
7108701292. 4

Question Number : 24 Question Id : 710870324 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 species of Cajanus is used to introgress salt tolerance in the cultivated species of Cajanus?

1. *Cajanus scaraboides*
2. *Cajanus lanceolatus*
3. *Cajanus platicarpus*
4. *Cajanus albicans*

Options :

7108701293. 1
7108701294. 2
7108701295. 3
7108701296. 4

Question Number : 25 Question Id : 710870325 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

Under IPR, what protects the intellectual property created by inventors ?

1. Copy right
2. Patents
3. Trade marks
4. Registered design

Options :

7108701297. 1
7108701298. 2
7108701299. 3
7108701300. 4

Question Number : 26 Question Id : 710870326 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 world's most inventory of the global conservation status of biological species is being maintained by

1. WWF
2. IUCN
3. MAB
4. IBWL

Options :

7108701301. 1

7108701302. 2

7108701303. 3

7108701304. 4

Question Number : 27 Question Id : 710870327 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: Pod corn	I: *Zea mays* var. everta
B: Pop corn	II: *Zea mays* var. ceratina
C: Wax corn	III: *Zea mays* var. tunicata
D: Flint corn	IV: *Zea mays* var. indurata

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

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

Options :

7108701305. 1
7108701306. 2
7108701307. 3
7108701308. 4

Question Number : 28 Question Id : 710870328 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
(Species)	(Chromosome number)
A: *Linum usitatissimum*	I: n = 18
B: *Cicer arietinum*	II: n = 7
C: *Brassica nigra*	III: n = 8
D: *Lens esculenta*	IV: n = 15

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

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

Options :

7108701309. 1
7108701310. 2
7108701311. 3
7108701312. 4

Question Number : 29 Question Id : 710870329 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
(Crop)	(Isolation distance for certified seed production)
A: Hybrid rice	I: 400 m
B: Johnson Grass	II: 800 m
C: Sesame	III: 100 m
D: Carrot	IV: 50 m

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

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

Options :

7108701313. 1
7108701314. 2
7108701315. 3
7108701316. 4

Question Number : 30 Question Id : 710870330 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

Adventive embryony is an example of

1. Vegetative propagation
2. Amphimixis
3. Agamospermy
4. Parthinogamy

Options :

7108701317. 1
7108701318. 2
7108701319. 3
7108701320. 4

Question Number : 31 Question Id : 710870331 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

Loss in vigour due to inbreeding is more visible in

1. Self-pollinated species
2. Cross-pollinated species
3. Apomictic species
4. Monoecious species.

Options :

7108701321. 1
7108701322. 2
7108701323. 3
7108701324. 4

Question Number : 32 Question Id : 710870332 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

If two individuals with a genotype AaBb are crossed, what proportion of the offprings will be of genotype aabb?

1. ½
2. ¼
3. 1/8
4. 1/16

Options :

7108701325. 1
7108701326. 2
7108701327. 3
7108701328. 4

Question Number : 33 Question Id : 710870333 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

Requirements for Marker Assisted Backcross Breeding are

A. High heritability

B. Tightly linked marker with target gene

C. Flanking markers

D. Multi-location trial

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

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

Options :

7108701329. 1
7108701330. 2
7108701331. 3
7108701332. 4

Question Number : 34 Question Id : 710870334 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

Chi-square test has the following applications

A. Test of segregation

B. Selection of genotype

C. Detection of genotype

D. Developing ANOVA table

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

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

Options :

7108701333. 1
7108701334. 2
7108701335. 3
7108701336. 4

Question Number : 35 Question Id : 710870335 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

Requirements for AFLP marker are

A. Random primers

B. Restriction enzymes

C. Adaptors

D. PCR

E. Short sequence repeats

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

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

Options :

7108701337. 1
7108701338. 2
7108701339. 3
7108701340. 4

Question Number : 36 Question Id : 710870336 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 breeding high-quality chapati wheat in India we prefer

A. Soft wheat

B. Hard wheat

C. *Triticum aestivum*

D. *Triticum durum*

E. *Triticum dicoccum*

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

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

Options :

7108701341. 1
7108701342. 2
7108701343. 3
7108701344. 4

Question Number : 37 Question Id : 710870337 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

Evidence for DNA as genetic material was obtained in which of the following experiments?

A. Avery, Mc Leod and Mc Carty experiment

B. Griffith Experiment

C. Conrat and Singer experiment

D. Watson and Crick experiment

E. Hershy and Chase experiment

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

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

Options :

7108701345. 1
7108701346. 2
7108701347. 3
7108701348. 4

Question Number : 38 Question Id : 710870338 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 population consisted of the following genotypes in the given numbers

160-Heterozygotes

20-Homozygous recessive

320-Homozygous dominants

What would be the frequency of dominant allele?

1. 10%
2. 40%
3. 32%
4. 80%

Options :

7108701349. 1
7108701350. 2
7108701351. 3
7108701352. 4

Question Number : 39 Question Id : 710870339 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 non-random association of alleles at different loci in a given population is referred to as

1. Linkage disequilibrium
2. Linkage equilibrium
3. Mendelian population
4. QTL analysis

Options :

7108701353. 1
7108701354. 2
7108701355. 3

7108701356. 4

Question Number : 40 Question Id : 710870340 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

Non-Mendelian inheritance includes

1. Maternal effect only
2. Maternal effect and epigenetic inheritance only
3. Epigenetic and extranuclear inheritance only
4. Maternal effect, Epigenetic and extranuclear inheritance only

Options :

7108701357. 1
7108701358. 2
7108701359. 3
7108701360. 4

Question Number : 41 Question Id : 710870341 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

Morgan discovered linkage when studying two genes in which of the following in Drosophila?

1. X-chromosome
2. Y-chromosome
3. Autosomes
4. Cytoplasm

Options :

7108701361. 1
7108701362. 2
7108701363. 3
7108701364. 4

Question Number : 42 Question Id : 710870342 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

Kary Banks Mullis invented PCR and received Nobel Prize in

1. Physics
2. Chemistry
3. Biology
4. Medicine

Options :

7108701365. 1

7108701366. 2

7108701367. 3

7108701368. 4

Question Number : 43 Question Id : 710870343 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

Antibiotic resistance genes are mostly used as what kind of markers?

1. Selectable
2. Scorable
3. Countable
4. Molecular

Options :

7108701369. 1

7108701370. 2

7108701371. 3

7108701372. 4

Question Number : 44 Question Id : 710870344 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

Expanded form of RAPD is

1. Randomly Amplified Polymorphic DNA
2. Random Amplification of Polymorphic DNA
3. Randomly Amplification of Polymorphic DNA
4. Random Amplified Polymorphic DNA

Options :

7108701373. 1
7108701374. 2
7108701375. 3
7108701376. 4

Question Number : 45 Question Id : 710870345 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

Hybrid between plasmid and phage lambda chromosome are known as

1. Plasmid vector
2. Cosmid vector
3. Fosmid vector
4. Binary vector

Options :

7108701377. 1
7108701378. 2
7108701379. 3
7108701380. 4

Question Number : 46 Question Id : 710870346 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

DUS testing is necessary for

A. Certification of a variety

B. Release and notification of a variety

C. Protection of a variety

Select the ***most appropriate*** answer from the options given below:

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

Options :

7108701381. 1
7108701382. 2
7108701383. 3
7108701384. 4

Question Number : 47 Question Id : 710870347 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

CSTL is located at

1. New Delhi
2. Lucknow
3. Patna
4. Varanasi

Options :

7108701385. 1
7108701386. 2
7108701387. 3

7108701388. 4

Question Number : 48 Question Id : 710870348 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

Two line system of hybrid seed production is possible in

1. CMS
2. GMS
3. TGMS
4. CGMS

Options :

7108701389. 1
7108701390. 2
7108701391. 3
7108701392. 4

Question Number : 49 Question Id : 710870349 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

Seed multiplication ratio of paddy is

1. 1:60
2. 1:80
3. 1:40
4. 1:100

Options :

7108701393. 1
7108701394. 2
7108701395. 3
7108701396. 4

Question Number : 50 Question Id : 710870350 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 certified classes of seeds under the Seeds Act?

A. Breeder Seed

B. Foundation Seed

C. Certified Seed

D. Nucleus Seed

E. Quality declared seed

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

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

Options :

7108701397. 1

7108701398. 2

7108701399. 3

7108701400. 4

Question Number : 51 Question Id : 710870351 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

Cross pollinated crop

A. Sunflower
B. Cabbage
C. Chow-Chow
D. Groundnut
E. Moth Bean

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

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

Options :
7108701401. 1
7108701402. 2
7108701403. 3
7108701404. 4

Question Number : 52 Question Id : 710870352 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

Grow-out test for seed certification is compulsory in hybrids of

A. Tomato
B. Brinjal
C. Castor
D. Maize
E. Pearl millet

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

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

Options :
7108701405. 1
7108701406. 2
7108701407. 3
7108701408. 4

Question Number : 53 Question Id : 710870353 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

Provision of 'Seed Register' is provided in

1. Seed Bill
2. PPV & FR Act
3. Seed Control Order
4. Seeds Act

Options :
7108701409. 1
7108701410. 2
7108701411. 3

7108701412. 4

Question Number : 54 Question Id : 710870354 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 rules are followed by ISTA for determining seed viability of a seed lot?

1. Four replications of 100 seeds each
2. Three replications of 50 seeds each
3. Four replications of 50 seeds each
4. Three replications of 100 seeds each

Options :

7108701413. 1
7108701414. 2
7108701415. 3
7108701416. 4

Question Number : 55 Question Id : 710870355 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

To break the dormancy and to enhance germination in orthodox seeds, the chemical stimuli used is

1. Sulphuric acid
2. Potasium nitrate
3. TTC
4. Formazane

Options :

7108701417. 1
7108701418. 2
7108701419. 3

7108701420. 4

Question Number : 56 Question Id : 710870356 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 Germination Value (GV) of tree seeds is calculated using the formula

1. GV = PV x MDG
2. GV = T x PV
3. GV = PV x B
4. GV = MDG x T

Options :

7108701421. 1
7108701422. 2
7108701423. 3
7108701424. 4

Question Number : 57 Question Id : 710870357 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

Loose smut is the seed borne disease in

1. Paddy
2. Wheat
3. Maize
4. Sorghum

Options :

7108701425. 1
7108701426. 2
7108701427. 3
7108701428. 4

Question Number : 58 Question Id : 710870358 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

Leaf spot is the seed borne disease in

1. Sesame
2. Groundnut
3. Castor
4. Linseed

Options :

7108701429. 1
7108701430. 2
7108701431. 3
7108701432. 4

Question Number : 59 Question Id : 710870359 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: Under the PPV&FR Act, a variety with Bt-gene can be registered
Statement II: Under the PPV&FR Act, a variety with RIP-gene (Ribosomal Inhibitory Protein) can be registered

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 :

7108701433. 1

7108701434. 2
7108701435. 3
7108701436. 4

Question Number : 60 Question Id : 710870360 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

According to India's Patent Law, a patent has a time limit of

1. 15 years
2. 20 years
3. 7 years
4. 9 years

Options :

7108701437. 1
7108701438. 2
7108701439. 3
7108701440. 4

Question Number : 61 Question Id : 710870361 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

Name the global initiative which is aimed at to establish a multilateral system of access and benefit sharing of Plant Genetic Resources through SMTA

1. Bioversity International
2. Commission on Genetic Resources for Food and Agriculture
3. Global Plan of Action
4. International Treaty for PGRFA

Options :

7108701441. 1
7108701442. 2

7108701443. 3
7108701444. 4

Question Number : 62 Question Id : 710870362 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 successful technique to conserve pollen grains of plant species is

1. Organic solvent method
2. Desiccation freeze drying
3. Cryopreservation
4. Low temperature storage (-20^0 C)

Options :

7108701445. 1
7108701446. 2
7108701447. 3
7108701448. 4

Question Number : 63 Question Id : 710870363 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

While breeding for abiotic resistance in legumes, drought tolerance and heat tolerance traits can be obtained from which one of the following *Vigna species?*

1. *Vigna radiate*
2. *Vigna aconitifolia*
3. *Vigna riukiuensis*
4. *Vigna tenucauli*

Options :

7108701449. 1
7108701450. 2
7108701451. 3

7108701452. 4

Question Number : 64 Question Id : 710870364 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 crops is a rich source of calcium, iron and niacin?

1. Finger millet
2. Chickpea
3. Lima bean
4. Redgram

Options :

7108701453. 1
7108701454. 2
7108701455. 3
7108701456. 4

Question Number : 65 Question Id : 710870365 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

Among the edible legume plants, which one of the following legumes possesses glandular hairs and secretes oxalic and malic acids?

1. *Vicia faba*
2. *Cajanus cajan*
3. *Vigna mungo*
4. *Cicer arietinum*

Options :

7108701457. 1
7108701458. 2
7108701459. 3
7108701460. 4

Question Number : 66 Question Id : 710870366 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 part of *Elaeis guineensis* fruit contains the maximum amount of oil?

1. Mesocarp
2. Endocarp
3. Endosperm
4. Exocarp

Options :

7108701461. 1
7108701462. 2
7108701463. 3
7108701464. 4

Question Number : 67 Question Id : 710870367 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

Under the **ITPGRFA,** the specified number of food and fodder crops which can be exchanged when executing **SMTA** is

1. 95 food crops and 35 fodder crops
2. 24 food crops and 15 fodder crops
3. 132 food crops and 29 fodder crops
4. 35 food crops and 29 fodder crops

Options :

7108701465. 1
7108701466. 2
7108701467. 3
7108701468. 4

Question Number : 68 Question Id : 710870368 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

Among the following types of rice, which form of rice possesses more of dextrin in its endosperm?

1. Wild rice
2. Glutinous rice
3. Parboiled rice
4. Hand pound rice

Options :

7108701469. 1
7108701470. 2
7108701471. 3
7108701472. 4

Question Number : 69 Question Id : 710870369 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

Name the tool which is used to assess the plant genetic diversity which reduces the large set of variables into a smaller set of 'artificial / uncorrelated' variables.

1. Cluster analysis
2. PCA
3. Mahalanobis D^2 analysis
4. Cladogram

Options :

7108701473. 1
7108701474. 2
7108701475. 3
7108701476. 4

Question Number : 70 Question Id : 710870370 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 which of the following crops species, allogamy is effected by the process called 'tripping'?

1. *Medicago sativa*
2. *Clitoria ternatea*
3. *Desmanthus tortuosum*
4. *Macroptelium atropurpureum*

Options :

7108701477. 1
7108701478. 2
7108701479. 3
7108701480. 4

Part C Genetics and Plant Breeding

Section Id :	7108709
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	7108709
Question Shuffling Allowed :	Yes

Question Number : 71 Question Id : 710870371 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

During the process of gene expression, the CpG island of promoter plays a major role in the regulation of genes by way of

1. DNA mutation
2. DNA repair
3. DNA methylation
4. Genomic imprinting

Options :

7108701481. 1

7108701482. 2

7108701483. 3

7108701484. 4

Question Number : 72 Question Id : 710870372 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 a population with a frequency of genotypes aa, Aa and AA; what will be the fate of the genotypes of F_1 on continuous three selfings?

1. $\frac{1}{4}$ F_1
2. $\frac{1}{8}$ F_1
3. $\frac{1}{64}$ F_1
4. $F_2 + \frac{1}{4}$ F_1

Options :

7108701485. 1

7108701486. 2

7108701487. 3

7108701488. 4

Question Number : 73 Question Id : 710870373 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

There are different checkpoints during the cell cycle. The 'Restriction point' is part of which phase of the cell cycle?

1. G1 phase
2. G2 phase
3. S phase
4. M phase

Options :

7108701489. 1
7108701490. 2
7108701491. 3
7108701492. 4

Question Number : 74 Question Id : 710870374 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 water molecules release during formation of a dinucleotide?

1. Five
2. Six
3. Seven
4. Four

Options :

7108701493. 1
7108701494. 2
7108701495. 3
7108701496. 4

Question Number : 75 Question Id : 710870375 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

Choose the correct sequence of events during the Central Dogma of Molecular Biology.

1. Replication – Transformation – Transcription – Translation
2. Reverse Transcription - Translation - Replication – Transformation
3. Replication – Transcription – Translation - Transduction
4. Reverse Transcription - Replication – Transcription – Translation

Options :

7108701497. 1

7108701498. 2

7108701499. 3

7108701500. 4

Question Number : 76 Question Id : 710870376 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 is the correct combination to explain a hermaphrodite flower modification?

1. Homogamous – Protandrous – Pollen shed prior to stigma receptivity
2. Dichogamous – Autogamous – Self fertilization
3. Homogamous – Cleistogamous – Pollen shed and stigma receptive when flower is closed
4. Dichogamous – Hercogamous – Barrier to self fertilization leading to allogamy

Options :

7108701501. 1

7108701502. 2

7108701503. 3

7108701504. 4

Question Number : 77 Question Id : 710870377 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 DNA molecule would have higher melting temperature?

1. TTCAGAACCTTT AAGTCTTGGAAA
2. ATATTCGGCTA TATAAGCCGTAT
3. CTAATAAATCGT GATTATTTAGCA
4. CCTGAGAGGTCC GGACTCTCCAGG

Options :

7108701505. 1
7108701506. 2
7108701507. 3
7108701508. 4

Question Number : 78 Question Id : 710870378 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 both prokaryotes and eukaryotes, the promoter has a consensus sequence which is present 20-30 bp upstream from start site for transcription and is called

1. Pribnow box
2. Recognition region
3. 5s transcription factor
4. CpG island

Options :

7108701509. 1
7108701510. 2
7108701511. 3
7108701512. 4

Question Number : 79 Question Id : 710870379 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

Corn grown in a field had lysine content of 2% with the variance of 0.16. When the same corn was grown in a greenhouse under controlled condition, the mean of lysine content was again 2%, but the variance was 0.09.

What will be the value of broad sense heritability for this trait?

1. 0.65
2. 0.56
3. 0.18
4. 0.32

Options :

7108701513. 1
7108701514. 2
7108701515. 3
7108701516. 4

Question Number : 80 Question Id : 710870380 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 *Agrostis tenuis* grass species, the genetic ability to grow in soils contaminated with the toxic metal nickel is determined by a dominant allele. Seventy-eight per cent of the seeds of the grass species was able to germinate and grow in the nickel contaminated soil. What proportion of the plant population is heterozygotes?

1. 0.39
2. 0.25
3. 0.50
4. 0.64

Options :

7108701517. 1
7108701518. 2
7108701519. 3

7108701520. 4

Question Number : 81 Question Id : 710870381 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 statements is incorrect with reference to the correlation and regression coefficients?

1. The correlation has no unit of measurement
2. The regression coefficient has limits between -1 to +1
3. The correlation is bidirectional and assumes no cause and effect relationship between variables
4. Regression coefficient is unidirectional and specifies the direction of cause and effect from one variable to other

Options :

7108701521. 1

7108701522. 2

7108701523. 3

7108701524. 4

Question Number : 82 Question Id : 710870382 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 mating designs involves the selection of several random plants from F_2 as males, and then backcrossing these males with each of their parents (female)?

1. NCD I
2. NCD II
3. NCD III
4. NCD IV

Options :

7108701525. 1

7108701526. 2
7108701527. 3
7108701528. 4

Question Number : 83 Question Id : 710870383 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 is the **incorrect** criterion for an ideal DNA marker to be used in Marker-assisted breeding?

1. High level of polymorphism
2. Co-dominant in expression
3. Clear distinct allelic features
4. Single copy with pleiotropic effect

Options :
7108701529. 1
7108701530. 2
7108701531. 3
7108701532. 4

Question Number : 84 Question Id : 710870384 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 used specifically, for testing the significance of the difference between two populations or sample mean, if the observations are paired?

1. Z-test
2. Null hypothesis
3. Students' t-test
4. Fisher's t-test

Options :
7108701533. 1

7108701534. 2
7108701535. 3
7108701536. 4

Question Number : 85 Question Id : 710870385 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, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Heritability is the proportion of observed variability due to the additive effects of genes.

Reason R: Additive effect is the difference between the two homozygotes.

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

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

Options :
7108701537. 1
7108701538. 2
7108701539. 3
7108701540. 4

Question Number : 86 Question Id : 710870386 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, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Development of a synthetic variety does not require too few or too many inbred lines.

Reason R: Selection of a minimum number of inbred lines for developing a synthetic variety will be favoured by having high GCA inbred lines.

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 and **R** is **NOT** the correct explanation of **A**.
3. **A** is true but **R** is false.
4. **A** is false but **R** is true.

Options :

7108701541. 1
7108701542. 2
7108701543. 3
7108701544. 4

Question Number : 87 Question Id : 710870387 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, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: CRP activator is a positive regulator protein.

Reason R: CRP activator is activated by cyclic AMP.

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 and **R** is NOT the correct explanation of **A**.
3. **A** is true but **R** is false.
4. **A** is false but **R** is true.

Options :

7108701545. 1

7108701546. 2

7108701547. 3

7108701548. 4

Question Number : 88 Question Id : 710870388 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, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: CAAT box is part of a conserved sequence located upstream of the start points of eukaryotic units.

Reason R: It is recognized by a limited group of transcription factors.

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 and **R** is **NOT** the correct explanation of A.
3. **A** is true but **R** is false.
4. **A** is false but **R** is true.

Options :

7108701549. 1
7108701550. 2
7108701551. 3
7108701552. 4

Question Number : 89 Question Id : 710870389 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, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Core sequences are common segments of DNA between species.

Reason R: It allows phase lambda to integrate with bacterial chromosome.

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 and **R** is **NOT** the correct explanation of **A**.
3. **A** is true but **R** is false.
4. **A** is false but **R** is true.

Options :

7108701553. 1

7108701554. 2

7108701555. 3

7108701556. 4

Question Number : 90 Question Id : 710870390 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

Helix–turn–helix motif describes an arrangement of two helices. As per this motif

A. There is an arrangement of one alpha and one beta helix.

B. There is an arrangement of two alpha-helices.

C. Out of two helices, one fits into the major groove of DNA and other lies across it.

D. Out of two helices, one fits into the major groove of DNA and other into the minor groove.

E. Both helices bind to major grooves of DNA.

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

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

Options :

7108701557. 1
7108701558. 2
7108701559. 3
7108701560. 4

Question Number : 91 Question Id : 710870391 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: German plant geneticist Karl Correns worked on maize and rediscovered Mendel's work.

Statement II: Austrian plant breeder Eric Von Tschermark worked on pea and rediscovered Mendel's work.

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 :

7108701561. 1
7108701562. 2
7108701563. 3
7108701564. 4

Question Number : 92 Question Id : 710870392 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: t-test and analysis of variance are part of non-parametric tests.

Statement II: Chi-square is a type of parametric test.

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 :

7108701565. 1

7108701566. 2

7108701567. 3

7108701568. 4

Question Number : 93 Question Id : 710870393 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 RNA-seq analysis, the raw sequence data is stored in SAM/BAM files.

Statement II: In RNA-seq analysis, the mapped reads are stored in FASTQ files.

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 :

7108701569. 1
7108701570. 2
7108701571. 3
7108701572. 4

Question Number : 94 Question Id : 710870394 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: During sequencing of DNA, unique Barcodes (index) are added as part of adapters.

Statement II: Dual barcodes allow both deconvolution and multiplexing of samples used for the DNA sequencing.

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 :

7108701573. 1
7108701574. 2
7108701575. 3
7108701576. 4

Question Number : 95 Question Id : 710870395 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: If main effect QTL explains ≥ 10% of the phenotypic variance, then it is considered major QTL.

Statement II: QTLs affecting RNA transcripts are called expression QTL.

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 :

7108701577. 1

7108701578. 2

7108701579. 3

7108701580. 4

Question Number : 96 Question Id : 710870396 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: High linkage disequilibrium indicates high rates of recombination.

Statement II: Selection in different population will produce exactly same effect on the pattern of linkage disequilibrium.

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 :

7108701581. 1
7108701582. 2
7108701583. 3
7108701584. 4

Question Number : 97 Question Id : 710870397 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: Q matrix measures the probability of alleles of a gene of individuals that are identical by descent.

Statement II: K matrix assumes individuals as unrelated and the population in Hardy-Weinberg equilibrium.

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 :

7108701585. 1
7108701586. 2
7108701587. 3
7108701588. 4

Question Number : 98 Question Id : 710870398 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 the long arm of chromosome 1 of rice, four genes viz., D, E, F and G are located. The distance between the genes are as follows

Gene relationship	Map units
G-D	11
G-E	7
G-F	22
E-F	15
D-E	4

What is the order of genes on the chromosome?

1. FEDG
2. GEDF
3. GDEF
4. EGDF

Options :

7108701589. 1
7108701590. 2
7108701591. 3
7108701592. 4

Question Number : 99 Question Id : 710870399 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 true about reverse breeding?

A. A breeding tool that can generate homozygous parental lines from a hybrid.

B. Promotes recombination in heterozygotes by knockdown of meiosis.

C. A tool which uses engineered meiosis.

D. Uses spore culture to generate homozygous doubled haploid.

E. Aimed to select gametes having non-recombinants chromosomes.

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

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

Options :

7108701593. 1
7108701594. 2
7108701595. 3
7108701596. 4

Question Number : 100 Question Id : 710870400 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**
Crop	Anti-nutritional Factor
A: Maize	I: Glucosinolates
B: *Brassica spp.*	II: Haemagglutinin
C: *Vicia faba*	III: Phenolic glucoside
D: Groundnut seed skin	IV: Phytic acid

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

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

Options :

7108701597. 1

7108701598. 2

7108701599. 3

7108701600. 4

Question Number : 101 Question Id : 710870401 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: Additive variance	I: Measured by generation mean analysis
B: Epistatic variance	II: Heterosis breeding
C: Dominance variance	III: Used in pure lines

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

1. A : III, B : I, C : II
2. A : I, B : II, C : III
3. A : III, B : II, C : I
4. A : II, B : I, C : III

Options :

7108701601. 1
7108701602. 2
7108701603. 3
7108701604. 4

Question Number : 102 Question Id : 710870402 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**

('I' represents Inbreds; 'V' represents open-pollinated varieties)

List I	List II
Hybrids	**Notations**
A: Double cross	I: $(I_1 \times I'_1) \times I_2$
B: Modified single cross	II: $V_1 \times I_2$
C: Top-cross hybrid	III: $(I_1 \times I_2)\ (I_3 \times I_4)$
D: Double Top-cross hybrid	IV: $(I_1 \times I_2) \times V_1$

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 : IV, B : III, C : II, D : I
4. A : III, B : I, C : II, D : IV

Options :

7108701605. 1

7108701606. 2

7108701607. 3

7108701608. 4

Question Number : 103 Question Id : 710870403 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: Plasmid cloning vector	I: Insert size is approximately 15 Kb
B: Cosmid cloning vector	II: Insert size is approximately 30-50 Kb
C: Bacterial Artificial Chromosome	III: Insert size is approximately 300 Kb
D: Yeast Artificial Chromosome	IV: Insert size is approximately 500 Kb

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 : I, B : II, C : IV, D : III
4. A : IV, B : III, C : II, D : I

Options :

7108701609. 1
7108701610. 2
7108701611. 3
7108701612. 4

Question Number : 104 Question Id : 710870404 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: 1990	I: Birth of 'Dolly sheep' the first cloned animal.
B: 1996	II: Transgenic was coined by Gordon and Ruddle
C: 1981	III: Human Genome Project launched
D: 1985	IV: Discovery of PCR

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

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

Options :

7108701613. 1
7108701614. 2
7108701615. 3
7108701616. 4

Question Number : 105 Question Id : 710870405 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: Penetrance	I: Degree to which genotype is expressed in the phenotype.
B: Sex-limited traits	II: Higher penetrance in one sex.
C: Sex-influenced traits	III: Zero penetrance in other sex.
D: Expressivity	IV: Percentage of individuals having a particular genotype that express the expected phenotype.

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

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

Options :

7108701617. 1
7108701618. 2
7108701619. 3
7108701620. 4

Question Number : 106 Question Id : 710870406 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

What is the probability that in a family of five children, 3 will be male and 2 will be female and are born in that order?

1. 1/32
2. 3/32
3. 5/32
4. 1/16

Options :

7108701621. 1
7108701622. 2
7108701623. 3
7108701624. 4

Question Number : 107 Question Id : 710870407 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

Sanger sequencing involves the use of

1. 2',4'-ddNTPs
2. 2',3'-ddNTPs
3. 3',5'-ddNTPs
4. 3',4'-ddNTPs

Options :

7108701625. 1
7108701626. 2
7108701627. 3
7108701628. 4

Question Number : 108 Question Id : 710870408 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

During cell cycle, histone protein synthesis occurs during

1. G1 phase
2. G2 phase
3. S phase
4. Prophase

Options :
7108701629. 1
7108701630. 2
7108701631. 3
7108701632. 4

Question Number : 109 Question Id : 710870409 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 ability of a genotype to produce a relatively narrow range of phenotypes in different environments is referred to as

1. Standard error
2. Adaptability
3. Homeostasis
4. Heritability

Options :
7108701633. 1
7108701634. 2
7108701635. 3
7108701636. 4

Question Number : 110 Question Id : 710870410 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 male sterile line is crossed with heterogenous male fertile plants. The progeny segregated as 1:1 male fertile and male-sterile plants. The type of male sterility is

1. Cytoplasmic male sterility
2. Cytoplasmic genetic male sterility
3. Genetic male sterility
4. Environment-sensitive Male sterility

Options :
7108701637. 1
7108701638. 2
7108701639. 3
7108701640. 4

Question Number : 111 Question Id : 710870411 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 wild species of *Oryza* is a tetraploid?

1. *Oryza nivara*
2. *Oryza eichingeri*
3. *Oryza lectifolia*
4. *Oryza brachyantha*

Options :
7108701641. 1
7108701642. 2
7108701643. 3
7108701644. 4

Question Number : 112 Question Id : 710870412 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

After how many days of the fertilization, the lint in cotton would gain maturity?

1. 45 – 50 days
2. 100 – 105 days
3. 20 – 25 days
4. 75 – 80 days

Options :
7108701645. 1
7108701646. 2
7108701647. 3
7108701648. 4

Question Number : 113 Question Id : 710870413 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 species of *Pennisetum* is a source of A_4 CMS?

1. *Pennisetum glaucum ssp. monodii*
2. *Pennisetum glaucum ssp. violaceum*
3. *Pennisetum squamulatum*
4. *Pennisetum pedicellatum*

Options :
7108701649. 1
7108701650. 2
7108701651. 3
7108701652. 4

Question Number : 114 Question Id : 710870414 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

Name the hexaploid obligate apomictic species of *Pennisetum*.

1. *Pennisetum pedicellatum*
2. *Pennisetum polystachyon*
3. *Pennisetum squamulatum*
4. *Pennisetum schweinfurthii*

Options :
7108701653. 1
7108701654. 2
7108701655. 3
7108701656. 4

Question Number : 115 Question Id : 710870415 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 seminal article "Search for new genes" was written by which one of the following Indian scientists?

1. M. S. Swaminathan
2. B. P. Paul
3. Harbhajan Singh
4. Gurdev Singh Khush

Options :
7108701657. 1
7108701658. 2
7108701659. 3
7108701660. 4

Question Number : 116 Question Id : 710870416 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

If the siRNA is a complete homologue of the target mRNA sequences, what is the net result of the translation process?

1. Double helix formation
2. Translation inhibition
3. Chromatin modification
4. mRNA degradation

Options :
7108701661. 1
7108701662. 2
7108701663. 3
7108701664. 4

Question Number : 117 Question Id : 710870417 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 two different restriction enzymes used in AFLP analysis to creat different sticky ends are

1. EcoR 1 and Hpa II
2. Hpa II and Mse I
3. EcoR 1 and Mse I
4. Bam H 1 and Mse I

Options :
7108701665. 1
7108701666. 2
7108701667. 3
7108701668. 4

Question Number : 118 Question Id : 710870418 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**
(Terms)	(Significance)
A: Antigibberellin	I: Cycocel
B: Growth inhibitor	II: ABA
C: Germination inhibitor	III: Scopoletin
D: Cell division	IV: Cytokinins

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

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

Options :

7108701669. 1
7108701670. 2
7108701671. 3
7108701672. 4

Question Number : 119 Question Id : 710870419 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**
(Flower type)	(Description)
A: Monoecious	I: Plants with only pistillate flowers
B: Gynoecious	II: Plant with both hermaphrodite and pistillate flowers
C: Andromonoecious	III: Plant with both staminate and pistillate flowers
D: Gynomonoecious	IV: Plant with both hermaphrodite and staminate flowers

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

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

Options :

7108701673. 1
7108701674. 2
7108701675. 3
7108701676. 4

Question Number : 120 Question Id : 710870420 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 is **incorrect**?

1. Calliclone: Clones of callus
2. Mericlone: Clones of meristem
3. Protoclone: Clones of protoplast
4. Somaclone: Clones of nucleus.

Options :

7108701677. 1
7108701678. 2
7108701679. 3
7108701680. 4