

National Testing Agency

Question Paper Name :	Economic Botany and Plant Genetic Resources 17th September Shift 2
Subject Name :	Economic Botany and Plant Genetic Resources
Creation Date :	2021-09-17 18:54:18
Duration :	120
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Economic Botany and Plant Genetic Resources

Group Number :	1
Group Id :	19088977
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 :	190889155
Section Number :	1

Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889195
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 1908898542 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is the device used to measure the power and speed of the wind?

1. Avometer
2. Anemometer
3. Airometer
4. Aviontimeter

Options :

19088934061. 1

19088934062. 2

19088934063. 3

19088934064. 4

Question Number : 2 Question Id : 1908898543 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Optical fibre used the concept of which of the following?

1. Reflection
2. Refraction
3. Total internal reflection
4. Total internal refraction

Options :

19088934065. 1

19088934066. 2

19088934067. 3

19088934068. 4

Question Number : 3 Question Id : 1908898544 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Yellow vein mosaic is the viral disease of which of the following plants?

1. Ladyfinger
2. Papaya
3. Sugarcane
4. Banana

Options :

19088934069. 1

19088934070. 2

19088934071. 3

19088934072. 4

Question Number : 4 Question Id : 1908898545 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following organ(s) is affected by Mumps disease?

1. Entire body
2. Skin
3. Eye
4. Parotid

Options :

19088934073. 1

19088934074. 2

19088934075. 3

19088934076. 4

Question Number : 5 Question Id : 1908898546 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is the chemical name of vitamin B₂?

1. Riboflavin
2. Calciferol
3. Pyridoxin
4. Niacin

Options :

19088934077. 1

19088934078. 2

19088934079. 3

19088934080. 4

Question Number : 6 Question Id : 1908898547 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is not the input unit of the computer?

1. Mouse
2. Keyboard
3. Screen
4. Scanner

Options :

19088934081. 1

19088934082. 2

19088934083. 3

19088934084. 4

Question Number : 7 Question Id : 1908898548 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The digital computer operates on which of the following principle?

1. Measurement
2. Calculation
3. Logical
4. Electrification

Options :

19088934085. 1

19088934086. 2

19088934087. 3

19088934088. 4

Question Number : 8 Question Id : 1908898549 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The non-cooperation movement of Gandhiji was launched in which of the following year?

1. 1915
2. 1922
3. 1920
4. 1930

Options :

19088934089. 1

19088934090. 2

19088934091. 3

19088934092. 4

Question Number : 9 Question Id : 1908898550 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

An Islamic revivalist movement named Wahabi movement was founded by which of the following person?

1. Sian Saheb
2. Syed Ahmed
3. Haji Shariat-Allah
4. DaduMian

Options :

19088934093. 1

19088934094. 2

19088934095. 3

19088934096. 4

Question Number : 10 Question Id : 1908898551 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is considered as the “Magna Carta of England Education in India”?

1. Hunter education commission
2. Lord Macaulay's Minute
3. Wood's Despatch
4. Thomas Babington Macaulay

Options :

19088934097. 1

19088934098. 2

19088934099. 3

19088934100. 4

Question Number : 11 Question Id : 1908898552 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following nutrient does not come under the ambit of 'macro-nutrients in Soil Health Card?

1. Nitrogen
2. Zinc
3. Phosphorous
4. Potassium

Options :

19088934101. 1

19088934102. 2

19088934103. 3

19088934104. 4

Question Number : 12 Question Id : 1908898553 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Cole crops, root crops and legumes come under the ambit of which of the following?

1. Olericulture
2. Pomology
3. Viticulture
4. Arboriculture

Options :

19088934105. 1

19088934106. 2

19088934107. 3

19088934108. 4

Question Number : 13 Question Id : 1908898554 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The study of individual trees, shrubs, vines, and perennial woody plants is known as which of the following?

1. Turf management
2. Arboriculture
3. Pomology
4. Viticulture

Options :

19088934109. 1

19088934110. 2

19088934111. 3

19088934112. 4

Question Number : 14 Question Id : 1908898555 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The ministry is implementing MIDH (Mission for Integrated Development of Horticulture) with effect from which of the following year?

1. 2012-13
2. 2019-20
3. 2015-16
4. 2014-15

Options :

19088934113. 1

19088934114. 2

19088934115. 3

19088934116. 4

Question Number : 15 Question Id : 1908898556 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The interaction of soils with living things, particularly plants are well known as which of the following?

1. Edaphology
2. Pedology
3. Soil zoology
4. Pedogenesis

Options :

19088934117. 1

19088934118. 2

19088934119. 3

19088934120. 4

Question Number : 16 Question Id : 1908898557 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following systems has also incorporated social aspects in itself?

1. Landscaping
2. Permaculture
3. Horticulture
4. Forest gardening

Options :

19088934121. 1

19088934122. 2

19088934123. 3

19088934124. 4

Question Number : 17 Question Id : 1908898558 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What do you term the phenomenon whereby the specific gene is added to the plant for producing a desirable phenotype?

1. Genetic manipulation
2. Genetic recombination
3. Genetic modification
4. Genetic hybridisation

Options :

19088934125. 1

19088934126. 2

19088934127. 3

19088934128. 4

Question Number : 18 Question Id : 1908898559 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is the focus of the participatory plant breeding program?

1. Scientists
2. Plants
3. Environment
4. Farmers

Options :

19088934129. 1

19088934130. 2

19088934131. 3

19088934132. 4

Question Number : 19 Question Id : 1908898560 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

How do you term the form of agriculture, in which, industrialized production of crops and animal products takes place?

1. Manufactured agriculture
2. Modern agriculture
3. Industrial agriculture
4. Mechanistic agriculture

Options :

19088934133. 1

19088934134. 2

19088934135. 3

19088934136. 4

Question Number : 20 Question Id : 1908898561 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Micro-irrigation fund of Rs. 5.000 crore has been placed with which of the following organization?

1. NABARD
2. IDBI
3. SBI
4. RRBs

Options :

19088934137. 1

19088934138. 2

19088934139. 3

19088934140. 4

Part B Core : Crop Sciences-I

Section Id :	190889156
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889196
Question Shuffling Allowed :	Yes

Question Number : 21 Question Id : 1908898562 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In one of the following plant, pollination generally occurs after the flower open, but the position of anthers in relation to stigmas ensures self-pollination.

1. Alfalfa
2. Tomato
3. Pigeonpea
4. Sunflower

Options :

19088934141. 1

19088934142. 2

19088934143. 3

19088934144. 4

Question Number : 22 Question Id : 1908898563 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In Pigeonpea the hybrid GTH-1 was released using the A₂ cytoplasm. Name the species from where this A₂ cytoplasm was derived

1. *Cajanus cajanifolium*
2. *Cajanus scaraboides*
3. *Cajanus sericeus*
4. *Cajanus acutifolius*

Options :

19088934145. 1

19088934146. 2

19088934147. 3

19088934148. 4

Question Number : 23 Question Id : 1908898564 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Out of the two methods for multicolour FISH, the direct method uses one of the following as reporter molecules. Choose the molecule.

1. Biotin
2. Digoxigenin
3. Dinitrophenol
4. Fluorochromes

Options :

19088934149. 1

19088934150. 2

19088934151. 3

19088934152. 4

Question Number : 24 Question Id : 1908898565 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If the garden pea has 14 chromosomes in its diploid complement, how many double trisomies could theoretically exist

1. 6
2. 9
3. 16
4. 21

Options :

19088934153. 1

19088934154. 2

19088934155. 3

19088934156. 4

Question Number : 25 Question Id : 1908898566 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Out of the four statements given below , which of the statements are true

- A. Mass selection is the best method for improving metric traits with low heritabilities
- B. Matings between siblings are the most extreme form of inbreeding possible among sexually reproducing species
- C. Line breeding is a special form of inbreeding used to maintain a high genetic relationship to a desired ancestor
- D. Loss of vigor (vegetative and/or reproductive) commonly accompanies an increase in polygenic homozygosity

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

Options :

19088934157. 1

19088934158. 2

19088934159. 3

19088934160. 4

Question Number : 26 Question Id : 1908898567 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Structural and functional rearrangements of chromatin are mediated by the modification of histone tails. These rearrangements include following process and one of the given process is not related to chromatin remodeling. Find the odd one.

- 1. Acetylation
- 2. Ubiquitinylation
- 3. Phosphorylation
- 4. Translation

Options :

19088934161. 1

19088934162. 2

19088934163. 3

19088934164. 4

Question Number : 27 Question Id : 1908898568 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A form of clonal reproduction in species hybrids whose gametes carry only the nuclear genome derived from one of the parental species

1. Hybridoma
2. Hybrid dysgenesis
3. Hybridogenesis
4. Hybrid swarm

Options :

19088934165. 1

19088934166. 2

19088934167. 3

19088934168. 4

Question Number : 28 Question Id : 1908898569 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match the Brassica species with its chromosome number (n)

List I	List II
A. <i>Brassica napus</i>	I. $n = 18$
B. <i>Brassica juncea</i>	II. $n = 19$
C. <i>Brassica rapa</i>	III. $n = 8$
D. <i>Brassica nigra</i>	IV. $n=10$

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

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

Options :

19088934169. 1

19088934170. 2

19088934171. 3

19088934172. 4

Question Number : 29 Question Id : 1908898570 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Suppose that in bees the dominant gene b^+ produces wild-type (brown) eyes, and its recessive allele b produces pink eye color. If a pink-eyed queen mates with a brown-eyed drone, their offspring would most likely be in one of the following pattern of segregation. Choose the correct pattern of segregation.

1. only wild-type progeny
2. wild-type workers and pink-eyed drones
3. only pink-eyed progeny
4. workers = $\frac{1}{2}$ wild : $\frac{1}{2}$ pink-eye; all drones wild type

Options :

19088934173. 1

19088934174. 2

19088934175. 3

19088934176. 4

Question Number : 30 Question Id : 1908898571 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In humans, the genes that are present on the X-chromosome show what kind of transmission from one to another generation?

1. Zig-zag transmission
2. Criss-cross transmission
3. Anti-parallel transmission
4. Direct transmission

Options :

19088934177. 1

19088934178. 2

19088934179. 3

19088934180. 4

Question Number : 31 Question Id : 1908898572 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: Sex-influenced traits show higher penetrance in one sex.

Statement II: Sex-limited traits show zero penetrance in other sex.

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088934181. 1

19088934182. 2

19088934183. 3

19088934184. 4

Question Number : 32 Question Id : 1908898573 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is/are sequencing-based marker(s)?

- A. Restriction Fragment Length Polymorphism (RFLP)
- B. Expressed Sequence Tags (ESTs)
- C. Diversity Array technologies (DArTs)
- D. Amplified Fragment Length Polymorphism (AFLP)

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

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

Options :

19088934185. 1

19088934186. 2

19088934187. 3

19088934188. 4

Question Number : 33 Question Id : 1908898574 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The undesirable effect caused due to the presence of a large chunk of donor chromosome even after many backcrosses is known as?

- 1. Association
- 2. Linkage equilibrium
- 3. Linkage disequilibrium
- 4. Linkage drag

Options :

19088934189. 1

19088934190. 2

19088934191. 3

19088934192. 4

Question Number : 34 Question Id : 1908898575 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Biofortification of crops means?

- A. Enrichment of crop edible portion for major nutrients.
- B. Enrichment of crop edible portion for some micronutrients.
- C. Inclusion of herbicide tolerance in the crops.
- D. Inclusion of insecticide tolerance in the crops.

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

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

Options :

19088934193. 1

19088934194. 2

19088934195. 3

19088934196. 4

Question Number : 35 Question Id : 1908898576 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which cell organelle plays an important role in cell wall formation?

- A. Golgi bodies
- B. Endoplasmic reticulum
- C. Lysosome
- D. Ribosome

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

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

Options :

19088934197. 1

19088934198. 2

19088934199. 3

19088934200. 4

Question Number : 36 Question Id : 1908898577 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Methylation in the genome can be identified by?

- A. Bisulphite sequencing
- B. Monosulphite sequencing
- C. Dideoxy sequencing
- D. Deoxy sequencing

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

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

Options :

19088934201. 1

19088934202. 2

19088934203. 3

19088934204. 4

Question Number : 37 Question Id : 1908898578 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In the process of genomic DNA isolation from the plant cell/tissue, the DNA is generally precipitated by adding?

1. Alkali
2. Alcohol
3. Acid
4. Phosphate buffer

Options :

19088934205. 1

19088934206. 2

19088934207. 3

19088934208. 4

Question Number : 38 Question Id : 1908898579 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Functional genomics can be studied through?

- A. Subtracted cDNA Libraries
- B. Whole-genome sequencing
- C. cDNA Microarrays
- D. RNA Seq

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

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

Options :

19088934209. 1

19088934210. 2

19088934211. 3

19088934212. 4

Question Number : 39 Question Id : 1908898580 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Working sample size for the conduct of tetrazolium test in onion is

- 1. 25 seeds
- 2. 60 seeds
- 3. 100 seeds
- 4. 400 seeds

Options :

19088934213. 1

19088934214. 2

19088934215. 3

19088934216. 4

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In case of coated seeds, the components of purity analysis are

- A. Pure pellets
- B. Unpelleted seed
- C. Other seed pellet
- D. Inert matter

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

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

Options :

19088934217. 1

19088934218. 2

19088934219. 3

19088934220. 4

Question Number : 41 Question Id : 1908898582 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Genetic male sterility (GMS) is exploited during hybrid seed production of

- 1. Chrysanthemum
- 2. Petunia
- 3. Ornamental sunflower
- 4. Snapdragon

Options :

19088934221. 1

19088934222. 2

19088934223. 3

19088934224. 4

Question Number : 42 Question Id : 1908898583 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Aeroponics technology is exploited in seed production of

1. Alfalfa
2. Potato
3. Aster
4. Phlox

Options :

19088934225. 1

19088934226. 2

19088934227. 3

19088934228. 4

Question Number : 43 Question Id : 1908898584 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Aril is the edible part of the seed in

- A. Litchi
- B. Nutmeg
- C. Durian
- D. Hazelnut
- E. Cocoa

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

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

Options :

19088934229. 1

19088934230. 2

19088934231. 3

19088934232. 4

Question Number : 44 Question Id : 1908898585 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The planting ratio of female and male parent followed during single cross hybrid seed production of pearl millet is

1. 1:1
2. 3:2
3. 6:2
4. 2:1

Options :

19088934233. 1

19088934234. 2

19088934235. 3

19088934236. 4

Question Number : 45 Question Id : 1908898586 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

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 : Complete seed processing procedural improves the seed health condition of the seed.

Reason R : Seeds are treated and dried (if necessary) before bagging.

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

19088934237. 1

19088934238. 2

19088934239. 3

19088934240. 4

Question Number : 46 Question Id : 1908898587 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
Vigour test	Crop
A. Cool germination test	I. Cotton
B. Cold test	II. Maize
C. Electrical conductivity test	III. Soybean
D. Controlled deterioration test	IV. Mustard

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

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

Options :

19088934241. 1

19088934242. 2

19088934243. 3

19088934244. 4

Question Number : 47 Question Id : 1908898588 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The "Seedling Symptomatology Test" to observe for *Fusarium* infection in cereal crops was developed by _____?

1. NA Cobb
2. Perry
3. Hiltner
4. SB Mathur

Options :

19088934245. 1

19088934246. 2

19088934247. 3

19088934248. 4

Question Number : 48 Question Id : 1908898589 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is both externally and internally seed-borne pathogen?

1. *Ustilago nuda*
2. *Sclerospora graminicola*
3. *Tilletia indica*
4. *Neovossia horrida*

Options :

19088934249. 1

19088934250. 2

19088934251. 3

19088934252. 4

Question Number : 49 Question Id : 1908898590 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Under the Protection of Plant Varieties and Farmers' Rights Act, the power to correct the clerical error or an obvious mistake in the registration certificate is delegated to

1. Registrar
2. Registrar General
3. Chairman
4. Chairperson

Options :

19088934253. 1

19088934254. 2

19088934255. 3

19088934256. 4

Question Number : 50 Question Id : 1908898591 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: The seed viability equation is a mathematical model that has been developed to predict seed storage life in different environments.

Statement II: The seed viability equation applies to both recalcitrant and orthodox seeds

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Options :

19088934257. 1

19088934258. 2

19088934259. 3

19088934260. 4

Question Number : 51 Question Id : 1908898592 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is a variable cost?

1. Initial investment
2. Interest on loan
3. Wages
4. Cost of production facility

Options :

19088934261. 1

19088934262. 2

19088934263. 3

19088934264. 4

Question Number : 52 Question Id : 1908898593 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In India, which one of the following is NOT related to guidelines and protocols for the safety assessment of GMOs?

1. IBSC
2. GEAC
3. RCGM
4. NBPGR

Options :

19088934265. 1

19088934266. 2

19088934267. 3

19088934268. 4

Question Number : 53 Question Id : 1908898594 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is not protected by IP legislation?

1. Trademarks
2. Trade secrets
3. Patents
4. Industrial designs

Options :

19088934269. 1

19088934270. 2

19088934271. 3

19088934272. 4

Question Number : 54 Question Id : 1908898595 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The permit to import germplasm/GMOs for research purposes in the country is issued by _____?

1. Director, NBPGR
2. Director, IISS
3. Plant Protection Advisor to Government of India
4. Director, NSRTC

Options :

19088934273. 1

19088934274. 2

19088934275. 3

19088934276. 4

Question Number : 55 Question Id : 1908898596 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The Indian Biological Diversity Act was passed in the Parliament in the year 2002, the authority constituted thereby has its headquarters in:

1. New Delhi
2. Bengaluru
3. Chennai
4. Kolkata

Options :

19088934277. 1

19088934278. 2

19088934279. 3

19088934280. 4

Question Number : 56 Question Id : 1908898597 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Self-pollination in plants results in

1. increased homozygosity
2. increased heterozygosity
3. heterosis
4. asexuality

Options :

19088934281. 1

19088934282. 2

19088934283. 3

19088934284. 4

Question Number : 57 Question Id : 1908898598 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Reduction in genetic variation that occurs when a small subset of individuals occupy and establish in a new colony:

1. Bottleneck effect
2. Founder effect
3. Domestication
4. Population sub-structure

Options :

19088934285. 1

19088934286. 2

19088934287. 3

19088934288. 4

Question Number : 58 Question Id : 1908898599 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Highly valued cotton variety called Egyptian cotton belongs to the species

1. *Gossypium herbaceum*
2. *G. barbadense*
3. *G. arboreum*
4. *G. hirsutum*

Options :

19088934289. 1

19088934290. 2

19088934291. 3

19088934292. 4

Question Number : 59 Question Id : 1908898600 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Carrot (*Daucus carota*) belongs to the family

1. Apiaceae
2. Cruciferae
3. Fabaceae
4. Solanceae

Options :

19088934293. 1

19088934294. 2

19088934295. 3

19088934296. 4

Question Number : 60 Question Id : 1908898601 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which among the following is not the amber colored, dwarf and high yielding variety of wheat developed and released for cultivation in India that resulted in green revolution

1. Kalyan Sona
2. Sonalika
3. Lerma Rojo
4. Sharbati Sonara

Options :

19088934297. 1

19088934298. 2

19088934299. 3

19088934300. 4

Question Number : 61 Question Id : 1908898602 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The language used for scientific nomenclature of plants is

1. English
2. Spanish
3. Latin
4. Roman

Options :

19088934301. 1

19088934302. 2

19088934303. 3

19088934304. 4

Question Number : 62 Question Id : 1908898603 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

An example of multilocus dominant DNA marker

1. AFLP
2. RFLP
3. STMS
4. SSR

Options :

19088934305. 1

19088934306. 2

19088934307. 3

19088934308. 4

Question Number : 63 Question Id : 1908898604 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Options :

- 19088934309. 1
- 19088934310. 2
- 19088934311. 3
- 19088934312. 4

Question Number : 64 Question Id : 1908898605 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The old World consists of all, **except** one of the following geographical areas :

- 1. Africa
- 2. Europe
- 3. Asia
- 4. Few Atlantic islands

Options :

- 19088934313. 1
- 19088934314. 2
- 19088934315. 3
- 19088934316. 4

Question Number : 65 Question Id : 1908898606 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following phenomenon **would not** necessarily give rise to true-to-type plants :

- 1. Polyembryony
- 2. Asexual reproduction
- 3. Apomixis
- 4. Parthenocarpy

Options :

- 19088934317. 1
- 19088934318. 2
- 19088934319. 3

19088934320. 4

Question Number : 66 Question Id : 1908898607 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Regeneration of germplasm stored in Long term Genebank is carried out when the seed viability drops below:

1. 65% of the initial viability
2. 75% of the initial viability
3. 85% of the initial viability
4. 90% of the initial viability

Options :

19088934321. 1

19088934322. 2

19088934323. 3

19088934324. 4

Question Number : 67 Question Id : 1908898608 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

For registration of plant varieties at PPV & FR, it is **not** essential to have one of the following criteria of :

1. Distinctiveness
2. Uniqueness
3. Stability
4. Uniformity

Options :

19088934325. 1

19088934326. 2

19088934327. 3

19088934328. 4

Question Number : 68 Question Id : 1908898609 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The High constant temperature oven method for determining moisture content of seeds is to be used for one of the following :

1. Any types of seeds
2. Oily seeds alone
3. Large sized seeds only
4. Protein and starch rich, non-oily seeds

Options :

19088934329. 1

19088934330. 2

19088934331. 3

19088934332. 4

Question Number : 69 Question Id : 1908898610 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
Methodology / microscopy	Its utilization in plant sciences
A. ELISA	I. Study of surfaces of biomaterials
B. GISH	II. Reconstruction of 3-D structures
C. SEM	III. Detection of translocation
D. TEM	IV. Detection of plant viruses
E. Confocal microscopy	V. Study of internal features of cells & organelles

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

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

Options :



19088934333. 1

19088934334. 2

19088934335. 3

19088934336. 4

Question Number : 70 Question Id : 1908898611 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Seed dormancy is controlled by all, **except** one of the following:

1. Light
2. Duration of seed storage
3. Temperature
4. Seed volume

Options :

19088934337. 1

19088934338. 2

19088934339. 3

19088934340. 4

Part C : Economic Botany and Plant Genetic Resources

Section Id :	190889157
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Enable Mark as Answered Mark for Review and Clear Response :	Yes

Sub-Section Id :

190889197

Question Shuffling Allowed :

Yes

Question Number : 71 Question Id : 1908898612 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The selection of characters and character states in phylogeny reconstruction is based on whether

1. similar traits are inherited from a common ancestor or not
2. similar traits are due to convergent evolution
3. both due to common ancestry and convergent evolution
4. None of the above is correct

Options :

19088934341. 1

19088934342. 2

19088934343. 3

19088934344. 4

Question Number : 72 Question Id : 1908898613 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Field experimental design most appropriate for evaluation of a large number of germplasm accessions (more than 20)

1. Completely Randomized Design
2. Randomized Block Design
3. Augmented Block Design
4. Split Plot Design

Options :

19088934345. 1

19088934346. 2

19088934347. 3

19088934348. 4

Question Number : 73 Question Id : 1908898614 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The major constituent of coconut (*Cocos nucifera* L.) oil is

1. lauric acid
2. myristic acid
3. caproic acid
4. palmitic acid

Options :

19088934349. 1

19088934350. 2

19088934351. 3

19088934352. 4

Question Number : 74 Question Id : 1908898615 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Gene frequencies in a random mating population of individuals may shift randomly and by chance. This is called

1. artificial selection
2. climatic shift
3. genetic drift
4. natural selection

Options :

19088934353. 1

19088934354. 2

19088934355. 3

19088934356. 4

Question Number : 75 Question Id : 1908898616 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Gene flow is change in allele frequency that occurs because

1. Individuals move among populations
2. If there are different allele frequencies in different populations of a species and individuals move to a new population
3. Both 1 and 2 are correct
4. Only 2 is correct

Options :

19088934357. 1

19088934358. 2

19088934359. 3

19088934360. 4

Question Number : 76 Question Id : 1908898617 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

For recording quantitative characters during germplasm characterization and preliminary evaluation, how many numbers of plants, on the average, are considered for cross-pollinated / often cross-pollinated species

1. 2-5
2. 5-10
3. 10-25
4. 25-30

Options :

19088934361. 1

19088934362. 2

19088934363. 3

19088934364. 4

Question Number : 77 Question Id : 1908898618 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Gas-liquid chromatography has following principles, applications and methodology, one of which is incorrect

1. It is applied to volatile substances that are thermally stable
2. It can be performed for non-volatile substances using glass plates coated with silica
3. During food analysis it involves determination of fatty acids, essential oil profiling, sugars/ oligosaccharides, alcohols, etc
4. It is based on the partition coefficient of the analyte between gaseous mobile phase and liquid phase

Options :

19088934365. 1

19088934366. 2

19088934367. 3

19088934368. 4

Question Number : 78 Question Id : 1908898619 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Musa acuminata and *Musa balbisiana* are two species of the Section which contains one of the most important and most widely grown fruit of the tropics. Identify the Section

1. Eumusa
2. Ensete
3. Callimusa
4. Australimusa

Options :

19088934369. 1

19088934370. 2

19088934371. 3

19088934372. 4

Question Number : 79 Question Id : 1908898620 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which one of the following plant species is not a source of sugars in India

1. *Beta vulgaris*
2. *Phoenix sylvestris*
3. *Buchanania lanzan*
4. *Borassus flabellifer*

Options :

19088934373. 1

19088934374. 2

19088934375. 3

19088934376. 4

Question Number : 80 Question Id : 1908898621 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Lucerne (*Medicago sativa*) is the most important crop for which of the following use

1. Medicines
2. Forage and fodder
3. Edible oils
4. Fibres

Options :

19088934377. 1

19088934378. 2

19088934379. 3

19088934380. 4

Question Number : 81 Question Id : 1908898622 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Hybrid Napier grass is a hybrid of one of the following

1. *Sorghum bicolour* X *S. arvense*
2. *Pennisetum purpureum* X *P. Americanum*
3. *Aegilops speltoides* X *A. cylindrica*
4. *Oryza sativa* X *O. nivara*

Options :

19088934381. 1

19088934382. 2

19088934383. 3

19088934384. 4

Question Number : 82 Question Id : 1908898623 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Root and tuber crops and several tropical fruit species have their origin primarily from

1. Central American and Andean centers
2. Central Indian centre
3. Mediterranean
4. Chinese

Options :

19088934385. 1

19088934386. 2

19088934387. 3

19088934388. 4

Question Number : 83 Question Id : 1908898624 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Teosinte is characterized by all except one of the following

1. Group of annual & perennial spp. of *Zea*
2. Native to Asia
3. Have 5-12 seeded female ears
4. Thrive in flooded conditions

Options :

19088934389. 1

19088934390. 2

19088934391. 3

19088934392. 4

Question Number : 84 Question Id : 1908898625 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Identify the **incorrect** statement among the following:

1. Fruits are the source of economic product in Allspice and Caraway
2. Asafoetida is extracted from the roots of *Ferula assa-foetida*
3. Saffron consists of stigma and styles collected from opened flowers of *Crocus sativus*
4. Opened flowers of *Syzygium aromaticum* provides the famous cloves

Options :

19088934393. 1

19088934394. 2

19088934395. 3

19088934396. 4

Question Number : 85 Question Id : 1908898626 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Global Initiatives on PGR informatics has resulted in several databases listed below. Which one of these are associated with an international organization and not a specific country?

1. GRIN
2. GENESYS
3. PGR Portal
4. NARO

Options :

19088934397. 1

19088934398. 2

19088934399. 3

19088934400. 4

Question Number : 86 Question Id : 1908898627 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The scientific body that coordinates plant taxonomy is

1. International Coordinated Bureau of Naming Plants
2. International Board of Plant Nomenclature
3. International Bureau of Botanical Nomenclature
4. International Code for Plant Nomenclature

Options :

19088934401. 1

19088934402. 2

19088934403. 3

19088934404. 4

Question Number : 87 Question Id : 1908898628 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The specific epithet *esculentus* reflects that the plant taxa

1. Is commonly occurring
2. has medicinal value
3. is edible
4. is an annual

Options :

19088934405. 1

19088934406. 2

19088934407. 3

19088934408. 4

Question Number : 88 Question Id : 1908898629 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In the scientific name *Glycine max* (L.) Merr.

1. Linnaeus discovered the species and Merrill gave its botanical nomenclature
2. Merrill discovered the species and Linnaeus gave it the name
3. Linnaeus first named the plant and Merrill revised it later
4. Merrill first named the plant and Linnaeus revised it later

Options :

19088934409. 1

19088934410. 2

19088934411. 3

19088934412. 4

Question Number : 89 Question Id : 1908898630 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is not a way by which heritable variation originates in nature

1. genetic recombination
2. selection
3. mutation
4. chromosome number variation

Options :

19088934413. 1

19088934414. 2

19088934415. 3

19088934416. 4

Question Number : 90 Question Id : 1908898631 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The Taxonomic key with each pair of contrasting choices (leads) that are equally indented and followed by the appropriate couplets, and thus often with very widely separated leads is called as

1. bracketed key
2. indented key
3. determinate key
4. indeterminate key

Options :

19088934417. 1

19088934418. 2

19088934419. 3

19088934420. 4

Question Number : 91 Question Id : 1908898632 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Bootstrapping used to evaluate statistical support to the clustering patterns in diversity analysis is based on the principle of

1. sampling with replacement
2. deleting top or bottom 10 percent OTUs
3. Jackknifing approach
4. Mantel's correlation test

Options :

19088934421. 1

19088934422. 2

19088934423. 3

19088934424. 4

Question Number : 92 Question Id : 1908898633 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

GURT , a term suggested to be used instead of terminator technology refers to

1. Genetic Use Restriction Technology
2. Genomic Universal Reuse Technology
3. Genotype Use Restriction Technology
4. Genetically Utilized Reliable Technology

Options :

19088934425. 1

19088934426. 2

19088934427. 3

19088934428. 4

Question Number : 93 Question Id : 1908898634 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Inheritance of the traits governed by a large number of genes whose individual effects are too small to be distinguished is termed as

1. multiallelic
2. polygenic
3. pleiotropy
4. epistasis

Options :

19088934429. 1

19088934430. 2

19088934431. 3

19088934432. 4

Question Number : 94 Question Id : 1908898635 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In case of native gel electrophoresis for separation of proteins/ isozymes, the electrophoretic mobility of these biomolecules is based upon their

1. net charge only
2. molecular weight only
3. both net charge and molecular weight
4. gel concentration only

Options :

19088934433. 1

19088934434. 2

19088934435. 3

19088934436. 4

Question Number : 95 Question Id : 1908898636 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Prior sequence information of the **target genome** is required for making suitable primers in the case of the following marker

1. RAPD
2. AFLP
3. STMS
4. RFLP

Options :

19088934437. 1

19088934438. 2

19088934439. 3

19088934440. 4

Question Number : 96 Question Id : 1908898637 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The concept of Centres and Non-centres of crop plants with reference to their domestication was proposed by

1. N.I. Vavilov
2. Charles Darwin
3. Jack R. Harlan
4. G. Ladizinski

Options :

19088934441. 1

19088934442. 2

19088934443. 3

19088934444. 4

Question Number : 97 Question Id : 1908898638 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Indian subcontinent is the Centre of Diversity for crops such as

1. black gram, moth bean, rice, pigeon pea, cucumber, banana, mango
2. black gram, wheat, pigeon pea, cucurbits, mango, jackfruit
3. rice, black gram, pigeon pea, maize, melons, banana, jackfruit
4. rice, sunflower, melons, banana, mango, black gram

Options :

19088934445. 1

19088934446. 2

19088934447. 3

19088934448. 4

Question Number : 98 Question Id : 1908898639 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match List I with List II

List I	List II
A. Dr MS Swaminathan	I. Explorer, popularly addressed as Indian Vavilov
B. Dr BP Pal	II. PGR related National & International policies and <i>sui generis</i> system
C. Dr RS Paroda	III. Green Revolution
D. Dr Harbhajan Singh	IV. Concept of 'Search for new genes'

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

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

Options :

19088934449. 1

19088934450. 2

19088934451. 3

19088934452. 4

Question Number : 99 Question Id : 1908898640 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which one of the following is not a morphological feature accompanying plant domestication :

1. Reduced plant size
2. Determinate growth
3. Non-shattering inflorescence/ fruits
4. Increased seed/ tuber dormancy

Options :

19088934453. 1

19088934454. 2

19088934455. 3

19088934456. 4

Question Number : 100 Question Id : 1908898641 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The reduction in heterozygosity in a population relative to a random mating population with the same allele frequencies is a measure of:

1. inbreeding coefficient
2. population sub-division
3. presence of population diversity
4. population fragmentation

Options :

19088934457. 1

19088934458. 2

19088934459. 3

19088934460. 4

Question Number : 101 Question Id : 1908898642 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The following statements describe if it is possible to capture the allelic diversities in natural populations by sampling and collections

- A. Greater number of sub-populations rather than higher number of individuals in a self-pollinating species
- B. Greater number of individuals in a few random sub-populations of cross-pollinating species.
- C. Sampling few individuals randomly in sub-populations irrespective of pollination mechanism

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

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

Options :

19088934461. 1

19088934462. 2

19088934463. 3

19088934464. 4

Question Number : 102 Question Id : 1908898643 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Following statements may describe that effective number of alleles is a measure of genetic diversity of populations since:

- A. it is a measure of number of alleles that are likely to be sampled each time samples are drawn from a population
- B. it is a measure of number of alleles that are likely to be transmitted to next generation in a population under equilibrium
- C. it is a measure of number of alleles with near equal frequencies

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

- 1. Only A is correct
- 2. Only B is correct
- 3. Only C is correct
- 4. A, B and C are correct

Options :

- 19088934465. 1
- 19088934466. 2
- 19088934467. 3
- 19088934468. 4

Question Number : 103 Question Id : 1908898644 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Population substructure is due to which one of the reasons:

1. Rampant human activity in ecosystems
2. Intense breeding programmes
3. Population fragmentation and reproductive isolation
4. Lack of genetic diversity in populations

Options :

- 19088934469. 1
- 19088934470. 2
- 19088934471. 3
- 19088934472. 4

Question Number : 104 Question Id : 1908898645 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Restrictions on plant exploration and collection in the country, requiring mandatory permissions, exist for all of the following, except one of them:

1. National Parks
2. Biosphere reserves
3. Threshing yards and stores
4. Wild life Sanctuaries

Options :

- 19088934473. 1
- 19088934474. 2

19088934475. 3

19088934476. 4

**Question Number : 105 Question Id : 1908898646 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Washing test, seed soaking, incubation, blotter method, agar plate method are procedures used for detection of following plant quarantine pathogens:

1. Phytoplasma
2. Plant viruses
3. Fungal and bacterial pathogens
4. Nematodes

Options :

19088934477. 1

19088934478. 2

19088934479. 3

19088934480. 4

**Question Number : 106 Question Id : 1908898647 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

ICAR-NBPGR conducts plant quarantine activities related to the plant material exchanged for research purposes in the locations:

1. New Delhi and Bhowali
2. Jodhpur and Hyderabad
3. Thrissur and Ranchi
4. Hyderabad and New Delhi

Options :

19088934481. 1

19088934482. 2

19088934483. 3

19088934484. 4

Question Number : 107 Question Id : 1908898648 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In the context of crop varieties, EDV refers to :

1. Economical Domestic Variety
2. Essentially Derived Variety
3. Environmentally Deviated Variety
4. Essentially Domestic Variety

Options :

19088934485. 1

19088934486. 2

19088934487. 3

19088934488. 4

Question Number : 108 Question Id : 1908898649 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

During seed health testing of crop germplasm in quarantine, the following important tests are characterized by statements:

Statement I: Blotter test, of visually unhealthy seeds kept in dark for 7 days, is used for detecting large number of seed-borne fungal pathogens and viruses.

Statement II: Real time X-ray radiography technique detects phytophagous chalcidoids, bruchids and few other insects in infested seeds after their treatment with lactophenol.

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

1. Both Statements I and II are false
2. Both Statements I and II are true
3. Statement I is false but Statement II is true
4. Statement I is true but II is false

Options :

19088934489. 1

19088934490. 2

19088934491. 3

Question Number : 109 Question Id : 1908898650 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

Under the PPV & FR act, one of the following **cannot** be categorized as a "Farmers' Variety" :

1. A wild relative of the variety well known to the farmers
2. A landrace of a var. about which the farmer possesses the common knowledge
3. Has been traditionally cultivated and evolved by the farmers
4. Recently domesticated wild species

Options :

19088934493. 1
19088934494. 2
19088934495. 3
19088934496. 4

Question Number : 110 Question Id : 1908898651 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1

From amongst the following options detailing the provisions and procedures for importing seed/planting materials for research purpose into India, select the **incorrect** one:

1. Indenter must apply to Director General, ICAR
2. Application must be filled using PQ Form 08
3. Transgenic seeds are permitted to be imported subject to Department of Biotechnology clearance
4. Validity of Import Permit so obtained is six months

Options :

19088934497. 1
19088934498. 2
19088934499. 3
19088934500. 4

Question Number : 111 Question Id : 1908898652 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

'Geographical Indication of Goods Act' has following defined features and roles

A. It is rightly designated as Geographical Indication of Goods (Registration and Protection) Act and is passed by Parliament of India

B. The provisions of law under it are exactly as those described by TRIPS

C. GI tag registered under it is valid for 15 years

D. It has been formulated using sui generis system

E. It protects IPR of registered products or commodities

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

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

Options :

19088934501. 1

19088934502. 2

19088934503. 3

19088934504. 4

Question Number : 112 Question Id : 1908898653 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Germplasm Registration carried out at ICAR-NBPGR facilitates registration of all, except one of the following:

1. Trait-specific germplasm
2. Germplasm which may not presently qualify for notification and release as varieties
3. Germplasm having novel, useful, unique traits
4. Done for only annual crop species

Options :

19088934505. 1

19088934506. 2

19088934507. 3

19088934508. 4

**Question Number : 113 Question Id : 1908898654 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Low constant temperature oven method for seed moisture content determination may be applicable to the following :

- A. Determining moisture content of oily seeds and seeds of medicinal and aromatic plants
- B. Determining moisture content of protein and starch rich seeds
- C. It is performed at temperatures of $113^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 4 ± 1 hours
- D. It is performed at temperatures of $103^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 17 ± 1 hours

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

- 1. Only A is correct
- 2. Only B and D are correct
- 3. Only A and D are correct
- 4. Both A and C are incorrect

Options :

19088934509. 1

19088934510. 2

19088934511. 3

19088934512. 4

**Question Number : 114 Question Id : 1908898655 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No**

Correct Marks : 4 Wrong Marks : 1

Seed viability monitoring of base collection samples from long term storage Genebanks is essential because of following factors, one of which is **incorrect**:

1. There is viability decline even in most optimal ex situ storage conditions
2. It facilitates decision on timely field regeneration
3. Samples stored in Genebanks with lower than 85% initial viability need to be monitored much earlier than those stored with higher than 85% viability
4. Non-oily crop seeds stored with more than 95% viability need to be monitored much earlier than oily crop seeds stored with same initial viability values.

Options :

19088934513. 1

19088934514. 2

19088934515. 3

19088934516. 4

Question Number : 115 Question Id : 1908898656 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In vitro conservation of vegetatively propagated plant species using slow growth methods involves :

- A. Reduction in growth rate of cultures
- B. It leads to increase in duration of subculture intervals
- C. Use of growth retardants in media is the most efficient method for most of the plant species and for ensuring maximum genetic stability
- D. Use of low incubation temperatures of +4°C is most favorable for conserving *in vitro* cultures of tropical plant species

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

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

Options :

19088934517. 1

19088934518. 2

19088934519. 3

19088934520. 4

Question Number : 116 Question Id : 1908898657 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Base collection of *in vitro* propagated plant species are stored at one of the following temperatures for long-term :

1. -20°C
2. +5°C
3. -196°C
4. +25°C

Options :

19088934521. 1

19088934522. 2

19088934523. 3

19088934524. 4

Question Number : 117 Question Id : 1908898658 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The following characteristics of non-orthodox seeds necessitates cryopreservation of their excised embryonic axes for long term conservation for most of such species, except for one of them:

1. Relatively large seed size
2. Uneven desiccation of seed parts during drying of large seeds before storage
3. Seeds are enclosed in fleshy coverings on maturity
4. Embryonic axes have high regeneration potential on retrieval from cryostorage

Options :

19088934525. 1

19088934526. 2

19088934527. 3

19088934528. 4

Question Number : 118 Question Id : 1908898659 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Encapsulation-dehydration method practised in cryobanking uses one of the following for making gel beads :

1. Phytigel
2. Calcium alginate
3. Agar
4. Gelrite

Options :

19088934529. 1

19088934530. 2

19088934531. 3

19088934532. 4

Question Number : 119 Question Id : 1908898660 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Virus elimination cannot be achieved by using one of the following methods:

1. Meristem culture
2. Chemotherapy
3. Synseed technology
4. Cryotherapy

Options :

19088934533. 1

19088934534. 2

19088934535. 3

19088934536. 4

Question Number : 120 Question Id : 1908898661 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Scientific name of Finger millet or Ragi is :

1. *Setaria italica*
2. *Panicum miliaceum*
3. *Eleusine coracana*
4. *Echinochloa frumentacea*

Options :

19088934537. 1

19088934538. 2

19088934539. 3

19088934540. 4