PREVIEW QUESTION BANK

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

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	301	Alongwith JD Watson, Francis Crick and Maurice Wilkins, Rosalind Franklin also contributed significantly towards the development of double helical structure of the DNA. All but Rosalind Franklin was awarded with the Nobel Prize. The reason for not awarding Nobel Prize to Roslind Franklin was - 1. She was too young for the award 2. Her research paper was not published in a high Impact Factor rated journal 3. Her subject did not have a Nobel Prize at all 4. She died before the result of the Nobel award for that year was declared A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
2	302	A nonsense mutation involves the creation of a / an - 1. Regulatory site 2. AG splice acceptor site 3. Stop codon 4. Different amino acids A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
3	303		4.0	1.00

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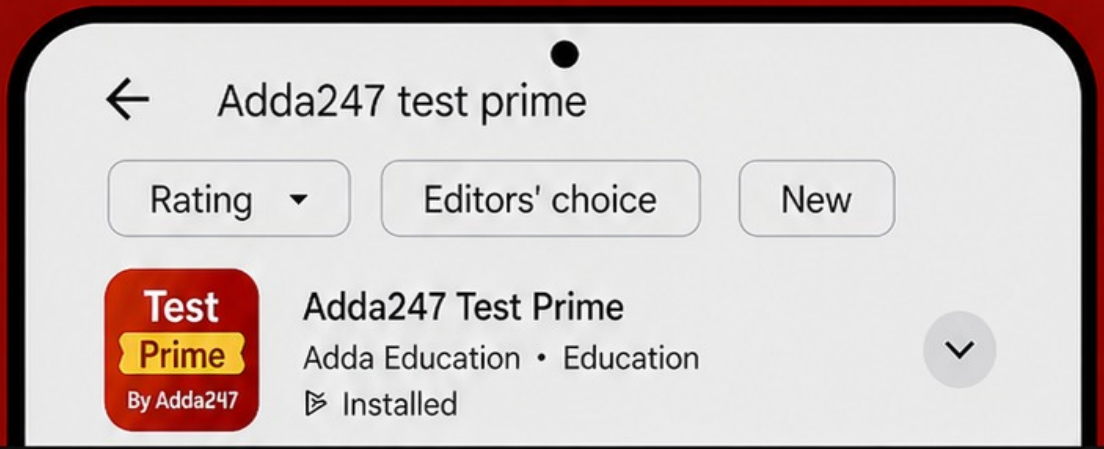

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		If an autosomal recessive disorder, which shows Hardy-Weinberg equilibrium, has an incidence of 1 in 6400, then the frequency of a carrier is approximately - 1. 1 in 20 2. 1 in 40 3. 1 in 80 4. 1 in 160 A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
4	304	The following genotypes are found in a population: AA/35, Aa/25, and aa/10. What are the allele frequencies of A and a ? 1. A= 0.32, and a = 0.68 2. A= 0.36, and a = 0.63 3. A= 0.68, and a = 0.32 4. A= 0.63, and a = 0.36 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
5	305	If the frequency of males affected with an X-linked recessive allele in a human population is 0.10 (1 in 10), what will be the expected frequency of affected females ? 1. 0.05 2. 0.01 3. 0.02 4. 0.001 A1 : 1 A2 : 2	4.0	1.00

A3 : 3

A4 : 4

Objective Question

6 306

If you have 5 nucleotides, say A, T, G, C and X, how many triplet codons you could have formed from it ?

1. 50
2. 125
3. 250
4. 1250

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

7 307

An example of 'primary introduction' of crop varieties in plant breeding in India is -

1. Sonalika
2. Kalyan Sona
3. Sonora 64
4. PBW343

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

8 308

Which one of the following is NOT a path of genetic information flow as per the modern Central Dogma of Biology ?

1. DNA ----> RNA ----> Protein
2. RNA ----> RNA
3. RNA ----> DNA
4. Protein ----> DNA

4.0 1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
9	309	Genetic homeostasis, which confers a population wider adaptability is, however, NOT exploited by - 1. Varietal mixtures and multiline varieties 2. Hybrids 3. Synthetic varieties 4. Composite varieties A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
10	310	Which one of the following information can NOT be obtained from a 'progeny test' ? 1. Breeding behavior of the plant. 2. The target trait is heritable or not. 3. The real value (genetic worth) of the plant. 4. Recombination frequency and map distance between the target loci in the plant. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
11	311		4.0	1.00

When several genes are considered together, the proportion of homozygotes for all the genes in a backcross generation in self-pollinated crops is given by the formula :

1. $[(2^m + 1)/ 2^m]^n$
2. $[(2^m - 1)/ 2^n]^m$
3. $[(2^m + 1)/ 2^n]^m$
4. $[(2^m - 1)/ 2^m]^n$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

12	312	Fixation of heterosis can NOT be achieved by - 1. Balanced lethal system 2. Apomixis 3. Pureline production 4. Vegetative propagation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

13	313	Which one of the following is NOT a component of heat stress tolerance in crop plants ? 1. Membrane stability 2. Photosynthate translocation 3. Osmoregulation 4. Enhanced heat sensitivity of photosystem-II A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
14	314	It has been observed in some cases that a particular quality trait is not expressed as such in the wild species, but it is detected only in the segregates recovered from its cross with the cultivated relatives; such traits are known as - 1. Lateral trait 2. Maternal trait 3. Hibernated trait 4. Latent trait A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
15	315	Two genes say A and B, are sex-linked genes in *Drosophila melanogaster*. Which of the following statements about the genes are correct ? (A) A and B may be linked (B) A and B may also have a 50% recombination frequency (C) A and B are linked and can recombine only in males (D) A and B are located in the same linkage group Choose the ***correct*** answer from the options given below : 1. (A), (B) and (C) only. 2. (B), (C) and (D) only. 3. (A), (B), (C) and (D). 4. (A), (B) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

16	316	In a field experiment conducted under RBD, the number of replications and the treatments should be adjusted in such a way that the error degree of freedom (d.f.) becomes : (A) < 12 (B) At least 12 (C) 12 or more (D) n-12 Choose the ***correct*** answer from the options given below : 1. (A), (B) and (D) only. 2. (B) and (C) only. 3. (C) and (D). 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

17	317	The main features of the ideotype proposed by Donald (1968) for wheat include - (A) Single, short, strong stem (B) Erect leaves (C) Large ear (D) Absence of awns Choose the ***correct*** answer from the options given below : 1. (A), (B) and (C) only. 2. (A), (B) and (D) only. 3. (A), (B), (C) and (D). 4. (B), (C) and (D) only. A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
18	318	Occurrence of unreduced gametes (i.e. 2n) has been reported in several crops including potatoes. Unreduced gametes can be produced by - (A) First-division restitution (B) Parallel spindle in the second meiotic division (C) Second division restitution (D) Occurrence of third meiotic division Choose the ***correct*** answer from the options given below : 1. (A), (B) and (C) only. 2. (A), (B) and (D) only. 3. (A), (C) and (D). 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
19	319		4.0	1.00

Arabidopsis thaliana is advantageous for plant genetic research, because -

(A) It is a small plant with a short life cycle

(B) It is a commercially important oilseed crop with a botanical closeness with almost all the cereal crops

(C) It has a small genome size with known sequence information

(D) It can be raised inexpensively

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

20	320	The demerits of Mass Selection in self-pollinated crops include - (A) Varieties developed by Mass selection are quite easy to identify in the seed production program (B) It is not possible to know phenotypic superiority of the selected plants is due to genotype or environment (C) Varieties selected through Mass selection are not as uniform as Pure-line varieties (D) Zygosity (homozygous or heterozygous) of the selected plants is not known Choose the ***correct*** answer from the options given below : 1. (A), (B) and (C) only. 2. (A), (B) and (D) only. 3. (A), (C) and (D). 4. (B), (C) and (D) only. A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
21	321	The consequences of G x E interaction in a plant breeding experiment are - (A) It reduces the association between phenotypic and genotypic values (B) It makes a selection from one environment to perform poorly in another environment (C) It affects the estimate of heritability, genetic advance, and dominance ratio (D) It makes the selection of a breeding program much easier Choose the ***correct*** answer from the options given below : 1. (A), (B) and (C) only. 2. (A), (B) and (D) only. 3. (A), (C) and (D). 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
22	322		4.0	1.00

A female *Drosophila* contains two XX chromosomes while a male *Drosophila* contains only one X chromosome. However, the amounts of enzymes or even RNA produced by the X-linked genes in the females are equal to those in the males. The reasons are -

(A) The translation machinery in the female is not as efficient as that in the male *Drosophila*

(B) The X-linked genes in the female *Drosophila* are highly regulated to make a balance in the expression of genes between males and females

(C) One X-chromosome in the female *Drosophila* is inactivated

(D) The Y-chromosome in the male *Drosophila* acts as an X-chromosome to make a balance in product development.

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. (A) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question				
23	323		4.0	1.00

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

List-I (Particulars)	List-II (Nomenclature)
(A) An increase in the size of the triplet repeat	(I) Frameshift mutation
(B) A 5 bp deletion in an exon	(II) Transversion
(C) Substitution of one amino acid for another	(III) Expansion
(D) An A to a T point mutation	(IV) Missense mutation

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

24	324		4.0	1.00

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

List-I (Chromosomal situation in human being)	List-II (Chromosome number)
(A) Monosomy	(I) 69
(B) Triploidy	(II) 48
(C) Tetraploidy	(III) 45
(D) Tetrasomy	(IV) 92

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

25	325		4.0	1.00

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

List-I (Name of crop)	**List-II** (Cytoplasm/Gene used)
(A) Rice	(I) Tift 23A
(B) Wheat	(II) Norin 10
(C) Maize	(III) Dee-geo-woo-gen
(D) Pearl millet	(IV) CMS-T

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

26	326		4.0	1.00

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

List-I (Genetic status of a crop)	List-II (Nomenclature)
(A) Homozygous- Homogeneous	(I) Hybrid
(B) Homozygous- Heterogenous	(II) Synthetic variety
(C) Heterozygous- Homogeneous	(III) Pure line variety
(D) Heterozygous- Heterogenous	(IV) Multiline variety

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

27	327		4.0	1.00

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

List-I (Name of the crops)	List-II (Phytochemicals present)
(A) Soybean	(I) Trypsin Inhibitor
(B) Brassica	(II) Aflatoxin
(C) Cotton	(III) Glucosinolate
(D) Groundnut	(IV) Gossypol

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

28	328		4.0	1.00

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

List-I (Specific traits)	**List-II** (Crops where it is commonly found)
(A) Monoecy	(I) Brassica
(B) Self-incompatibility	(II) Pearl millet
(C) Protogyny	(III) Maize
(D) Dioecy	(IV) Papaya

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

29	329		4.0	1.00

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

List-I (Particulars)	List-II (Formula used)
(A) Number of individuals in a perfect F_2 population	(I) 2^n
(B) Number of perfect homozygous individuals in an F_2 population	(II) 3^n
(C) Number of different heterozygous genotypes in an F_2 population	(III) 4^n
(D) Number of different kinds of genotypes in an F_2 population	(IV) $3^n - 2^n$

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

30	330		4.0	1.00

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

List-I (Person / product)	**List-II** (Description / particulars)
(A) Louise Brown	(I) First Transgenic tomato
(B) Lulu Nana	(II) First IVF human baby
(C) Dolley	(III) First mammal cloned
(D) Flavr-Savr	(IV) First Genome-edited human baby

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

31 | 331 | 4.0 | 1.00

The development of a composite variety consists of the following important steps. Arrange them in order from the first to the last -

(A) Evaluation of F_1s

(B) Mixing in equal quantities the parental seeds of superior crosses

(C) Intermating among selected genotypes to develop F_1s

(D) Selection of heterozygous base materials

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

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

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
32	332	The concept of genes is not static but dynamic. Arrange the changing concept of genes chronologically - from earliest to the latest (A) Gene is a sequence of nucleotides encoding functional products (B) Isolation of nuclein by Friedrich Mischer (C) One gene-one metabolic pathway block (D) One gene-one polypeptide Choose the ***correct*** answer from the options given below : 1. (B), (A), (C), (D). 2. (C), (B), (A), (D). 3. (B), (A), (D), (C). 4. (B), (C), (D), (A). A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
33	333		4.0	1.00

Obtaining Intellectual Property Rights (IPR) in the form of a 'Patent' is an important activity to protect any invention or discovery. However, filing an application for a Patent is a very critical step in this process. Here is a list of steps in filing and getting a Patent for an intellectual product. Arrange the steps from the first to the last in order -

(A) Filing an application to the Patent Office

(B) Development of a patentable product

(C) Clearing the public challenges or any other issues raised by the Patent Office

(D) Scrutiny and publication of the application by the Patent Office for public knowledge and challenge, if any

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

34	334	Arrange the steps of developing a synthetic variety of a crop, chronologically i.e. from first to the last (A) Mixing of equal amounts of seeds from the parental lines (B) Identification of suitable parental lines (C) Growing of mixed seeds in open-pollinated conditions (D) Multiplication by open pollination for one or more generations and distribution to the growers Choose the ***correct*** answer from the options given below : 1. (B), (A), (C), (D). 2. (A), (B), (D), (C). 3. (B), (A), (D), (C). 4. (C), (B), (D), (A).	4.0	1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

35 | 335 | 4.0 | 1.00

Given below are two statements :

Statement (I) : An effective germplasm collection is the pre-requisite for any successful breeding program.

Statement (II) : Genetic variability is the root of any breeding program.

In light of the above statements, choose the ***most appropriate*** 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

36 | 336 | 4.0 | 1.00

Given below are two statements :

Statement (I) : Insertion Sequences (IS) are short DNA sequences (800-1400 bp) and have the ability to transpose.

Statement (II) : IS also promotes recombination between non-homologous chromosomes.

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

1. Both **Statement (I)** and **Statement (II)** are correct.
2. Both **Statement (I)** and **Statement (II)** are incorrect.
3. **Statement (I)** is correct but **Statement (II)** is incorrect.
4. **Statement (I)** is incorrect but **Statement (II)** is correct.

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
37	337	Given below are two statements, one is labeled as **Assertion (A)**, and the other one is labeled as **Reason (R)**. **Assertion (A) :** Screening of rice for resistance to stem borer is greatly facilitated in the off-season as compared to that in the main growing season. **Reason (R) :** In the off-season, few alternate hosts are available for the female moths of the stem borer to lay eggs and hence much heavier infestation occurs in the off-season rice. In light of the above statements, choose the ***most appropriate*** answer from the options given below. 1. Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**. 2. Both **(A)** and **(R)** are correct but **(R)** is NOT the correct explanation of **(A)**. 3. **(A)** is correct but **(R)** is not correct. 4. **(A)** is not correct but **(R)** is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
38	338		4.0	1.00

Given below are two statements :

Statement (I) : Gregor Johann Mendel worked on *Pisum sativum* and established the laws of inheritance of traits.

Statement (II) : Gregor Johann Mendel also worked on mice, however, he had to abandon them due to pressure from the religious authority.

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

1. Both **Statement (I)** and **Statement (II)** are correct.
2. Both **Statement (I)** and **Statement (II)** are incorrect.
3. **Statement (I)** is correct but **Statement (II)** is incorrect.
4. **Statement (I)** is incorrect but **Statement (II)** is correct.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

39 | 339 | 4.0 | 1.00

Given below are two statements :

Statement (I) : James Watson, Francis Crick, and Maurice Wilkins were awarded the Nobel Prize for developing the double helical structure of DNA.

Statement (II) : Rosalind Franklin was not awarded the Nobel Prize for her contribution towards developing the double helical structure of DNA, because one Nobel Prize can not be shared with more than three persons at a time.

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

1. Both **Statement (I)** and **Statement (II)** are correct.
2. Both **Statement (I)** and **Statement (II)** are incorrect.
3. **Statement (I)** is correct but **Statement (II)** is incorrect.
4. **Statement (I)** is incorrect but **Statement (II)** is correct.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

40 | 340 | 4.0 | 1.00

Given below are two statements :

Statement (I) : Agricultural Scientists Recruitment Board (ASRB) tests and recommends the selection of Agricultural Research Service (ARS) scientists to the Indian Council of Agricultural Research (ICAR).

Statement (II) : The Director General of the ICAR is also the Chairman of the ASRB.

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

1. Both **Statement (I)** and **Statement (II)** are correct.
2. Both **Statement (I)** and **Statement (II)** are incorrect.
3. **Statement (I)** is correct but **Statement (II)** is incorrect.
4. **Statement (I)** is incorrect but **Statement (II)** is correct.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

41 | 341 | 4.0 | 1.00

Which one of the following is Fungi Like Organism known to cause plant disease epidemics ?

1. Saprolegnia
2. Phythophthora
3. Magnaporthe
4. Puccinia

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

42 | 342 | 4.0 | 1.00

		Which one of the following pathogen propagule is adapted for long distance movement by air ? 1. Magnaporthe 2. Phytophthora 3. Pythium 4. Puccinia A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
43	343	Gene for Gene Interaction is best observed in _____. 1. Biotrophic Pathogens-Host Pathosystem 2. Hemibiotrophic Pathogens-Host Pathosystem 3. Necrotrophic Pathogens-Host Pathosystem 4. Saprophytes A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
44	344		4.0	1.00

Which one of the following are biotrophic fungi ?

(A) Albugo

(B) Puccinia

(C) Glomus

(D) Blumeria

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

45	345	Polycyclic diseases are characterized by _____.	4.0	1.00

(A) Air borne nature

(B) Foliar infection

(C) Multiplicity of infection

(D) Short generation time

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

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

A1 : 1

A2 : 2

A3 : 3

		A4 : 4		
Objective Question				
46	346	Evolutionarily linked Genome Reduction is observed in _____. (A) Xylella (B) Phytoplasma (C) Phytophthora (D) Magnaporthe Choose the ***correct*** answer from the options given below : 1. (A) and (B) only. 2. (A), (B) and (D) only. 3. (A), (B), (C) and (D). 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
47	347		4.0	1.00

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

List-I (Theory proposed/Characteristic)	List-II (Author/Thinker)
(A) Gene for Gene	(I) H.H. Flor
(B) Germ Theory	(II) Anton de Bary
(C) Puccinia path	(III) K.C. Mehta
(D) Elicitor	(IV) Noel T Keen

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

48	348		4.0	1.00

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

List-I (Book)	**List-II** (Author)
(A) Plant Pathology and Plant Pathogens	(I) John A. Lucas
(B) Fundamentals of Plant Pathology	(II) R.S. Mehrotra
(C) Essential Plant Pathology	(III) Gail L. Schumann AND Cleora J. D'Arcy
(D) Basic Plant Pathology Methods	(IV) James B. Sinclair AND Onkar Dev Dhingra

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

49	349		4.0	1.00

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

List-I (Characteristic)	List-II (Organism)
(A) Flagella	(I) Viruses
(B) Dark Conidia	(II) Bacteria
(C) Short generation time	(III) Puccinia
(D) Intracelluar movement	(IV) Oomycetes

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

50 350 4.0 1.00

(A) *Magnaporthe* is a pathogen on dicot only

(B) *Puccinia* is a pathogen on monocot only

(C) *Ralstonia* is a pathogen on dicot and monocot

(D) RNA virus is a pathogen on dicot and monocot only

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51 | 351 | 4.0 | 1.00

(A) *Ralstonia* causes wilt disease

(B) *Fusarium* causes wilt disease

(C) *Verticillium* causes wilt disease

(D) *Pseudomonas* causes wilt disease

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

52 | 352 | 4.0 | 1.00

(A) Certain plant viruses are vectored by insect

(B) Certain plant viruses are transmitted by mechanical means

(C) No plant viruses are vectored by fungi

(D) No plant viruses are vectored by nematodes

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

53 353

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

Assertion (A) : Oomycetes pathogens need high moisture for their dissemination.

Reason (R) : Oomycetes pathogens do produce motile spores during their life cycle.

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.

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

54 354

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

Assertion (A) : Bacterial phytopathogen do cause explosive epidemics.

Reason (R) : Bacterial phytopathogens have short generation time by binary fision.

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.

4.0 1.00

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

55 | 355 | 4.0 | 1.00

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

Assertion (A) : Only vegetatively propagated planting are responsible for transboundary movement of pathogens.

Reason (R) : High moisture contents in the vegetative propagation material supports pathogen viability.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

56 | 356 | 4.0 | 1.00

Given below are two statements :

Statement (I) : Uredospores are motile.

Statement (II) : Viruses are motile.

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

1. Both **Statement (I)** and **Statement (II)** are correct.
2. Both **Statement (I)** and **Statement (II)** are incorrect.
3. **Statement (I)** is correct but **Statement (II)** is incorrect.
4. **Statement (I)** is incorrect but **Statement (II)** is correct.

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
57	357	Given below are two statements : **Statement (I) :** Pathological wilt is usually irreversible leading to the death of plants. **Statement (II) :** Physiogical wilt too is reversible prior to the permanent wilting point. In light of the above statements, choose the ***most appropriate*** answer from the options given below. 1. Both **Statement (I)** and **Statement (II)** are correct. 2. Both **Statement (I)** and **Statement (II)** are incorrect. 3. Statement (I) is correct but **Statement (II)** is incorrect. 4. **Statement (I)** is incorrect but **Statement (II)** is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
58	358	Given below are two statements : **Statement (I) :** RNA is the only genetic element in plant viruses. **Statement (II) :** RNA viruses are known to cause crop losses. In light of the above statements, choose the ***most appropriate*** answer from the options given below. 1. Both **Statement (I)** and **Statement (II)** are correct. 2. Both **Statement (I)** and **Statement (II)** are incorrect. 3. **Statement (I)** is correct but **Statement (II)** is incorrect. 4. **Statement (I)** is incorrect but **Statement (II)** is correct. A1 : 1	4.0	1.00

A2 : 2

A3 : 3

A4 : 4

Objective Question

59 | 359 | 4.0 | 1.00

Given below are two statements :

Statement (I) : Transboundary pathogen triggered plant disease epidemics is responsible for famine in Europe in 19th century.

Statement (II) : Invasive pathogens are highly aggressive.

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

1. Both **Statement (I)** and **Statement (II)** are correct.
2. Both **Statement (I)** and **Statement (II)** are incorrect.
3. **Statement (I)** is correct but **Statement (II)** is incorrect.
4. **Statement (I)** is incorrect but **Statement (II)** is correct.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

60 | 360 | 4.0 | 1.00

Given below are two statements :

Statement (I) : Phytoplasmas are wall less bacteria.

Statement (II) : Phytoplasma do possess flagella.

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

1. Both **Statement (I)** and **Statement (II)** are correct.
2. Both **Statement (I)** and **Statement (II)** are incorrect.
3. **Statement (I)** is correct but **Statement (II)** is incorrect.
4. **Statement (I)** is incorrect but **Statement (II)** is correct.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

61 | 361 | 4.0 | 1.00

Given below are two statements :

Statement (I) : Lichens are the symbiotic associations between a photobiont and a mycobiont partner.

Statement (II) : Mycorrhizae are the symbiotic associations between plant root and fungi.

In light of the above statements, choose the ***most appropriate*** 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

62 | 362 | 4.0 | 1.00

Which of the following traits are observed in archaea ?

(A) Absence of Peptidoglycan in cell wall

(B) Resistant to kanamycin

(C) Endospore formation

(D) Presence of S layer

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

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

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
63	363	Given below are two statements : **Statement (I) :** Plasma membrane in bacteria is composed of double layer of phospholipid molecules. **Statement (II) :** Plasma membrane is the site of enzymes involved in energy production in bacteria. In light of the above statements, choose the ***most appropriate*** answer from the options given below. 1. Both **Statement (I)** and **Statement (II)** are false. 2. Both **Statement (I)** and **Statement (II)** are true. 3. **Statement (I)** is true but **Statement (II)** is false. 4. **Statement (I)** is false but **Statement (II)** is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
64	364		4.0	1.00

Given below are two statements :

Statement (I) : *Saccharomyces cerevisiae* used in baking industry is a multicellular fungus.

Statement (II) : Both haploid and diploid cells of *Saccharomyces cerevisiae* may divides asexually by budding.

In light of the above statements, choose the ***most appropriate*** 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

65 | 365 | 4.0 | 1.00

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

List-I (Fungi)		List-II (Importance)	
(A)	*Pleurotus ostreatus*	(I)	Phytopathogenic
(B)	*Magnaporthe oryzae*	(II)	Entomopathogenic
(C)	*Rhizophagus irregularis*	(III)	Edible
(D)	*Metarhizium*	(IV)	Mycorrhizal

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

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

A1 : 1

A2 : 2

		A3 : 3 A4 : 4		
Objective Question				
66	366	Which of the following microorganisms lacks cell wall ? 1. *Azotobacter* 2. *Rickettesia* 3. *Mycoplasma* 4. *Clostridium* A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
67	367	**Statement I :** Bacterial plasmids can be used as a vector for gene transfer in plants. **Statement II :** Plasmids are double stranded, extrachromosomal DNA found in bacteria which are capable of autonomous replication in suitable host. 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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
68	368		4.0	1.00

		Which of the following is involved in the transfer of amino acids from cytoplasm to the ribosome for protein synthesis ? 1. mRNA 2. rRNA 3. tRNA 4. siRNA A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
69	369	Which of the following have the ability to convert ammonia into nitrite ? (A) *Nitrosomonas* (B) *Nitrosospira* (C) *Nitrosococcus* (D) *Nitrobacter* (E) *Nitrococcus* Choose the ***correct*** answer from the options given below : 1. (A), (B), (D) and (E) only. 2. (A), (B), (C) and (D) only. 3. (A), (B) and (C) only. 4. (D) and (E) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
70	370		4.0	1.00

Given below are two statements :

Statement (I) : Irradiation of DNA with UV light cause formation of covalent bond between the thymine molecules on the same strand.

Statement (II) : Thiamine dimerization in DNA caused by UV radiations can be reverted by Photo-reactivation.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

71	371	Microbes which consume organic molecules for carbon and energy are called ? 1. Chemolithotrophs 2. Photoautotrophs 3. Chemoautotrophs 4. Chemoheterotrophs A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

72	372		4.0	1.00

		In bacterial conjugation, what is the essential property of a donor strain ? 1. F-plasmid 2. Flagella 3. Capsule layer 4. Lipoproteins A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
73	373	How many nucleotides will be present in a double stranded DNA fragment of 2 kb ? 1. 1000 2. 2000 3. 4000 4. 500 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
74	374		4.0	1.00

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

Assertion (A) : In *Bacillus* culture raised in a chemically defined medium, sporulation is initiated in the stationary phase.

Reason (R) : Lack of nutrients and high cell density trigger sporulation.

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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

75	375	Which of the following association is favourable for P nutrition in higher plants ? 1. *Rhizobium*–Legume symbiosis 2. *Azolla–Anabaena* symbiosis 3. Actinorrhizal symbiosis 4. Mycorrhizal association A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

76	376		4.0	1.00

		The interaction in which one organism is benefitted and the other is neither benefited nor harmed is known as 1. Synergism 2. Antagonism 3. Commensalism 4. Mutualism A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
77	377	Given below are two statements : **Statement (I) :** Viral genome is protected by protein shell known as capsid. **Statement (II) :** Viruses can be used as vectors to transfer foreign gene into plants. In light of the above statements, choose the ***most appropriate*** 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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
78	378		4.0	1.00

		Given below are two statements : **Statement (I) :** Biogas is a mixture of CH_4, CO_2 and H_2. **Statement (II) :** Biogas is produced by aerobic digestion of organic waste material. In light of the above statements, choose the ***most appropriate*** answer from the options given below. 1. Both **Statement (I)** and **Statement (II)** are false. 2. Both **Statement (I)** and **Statement (II)** are true. 3. **Statement (I)** is true but **Statement (II)** is false. 4. **Statement (I)** is false but **Statement (II)** is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
79	379	According to Koch's first postulate 1. The same disease causing agent must be isolated from experimentally infected animal 2. The isolated causative agent of the disease must be able to produce disease when injected into healthy animal 3. The causative agent of the disease must be present in every diseased animal 4. The disease causing agent must be isolated from diseased animal and grown in pure culture A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
80	380		4.0	1.00

		The practice of growing different crops in recurrent succession on the same land is known as 1. Crop cycle 2. Crop rotation 3. Intercropping 4. Mixed cropping A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
81	381	One of the most important considerations during the maintenance and production of Breeder's seed in an open-pollinated variety (OPV) is the - 1. Number of plants/ears to be used to represent the OPV 2. Number of fertile plants per plot 3. Number of seedless plants per plot 4. Number of weed plants per plot A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
82	382	The breeding method usually used to produce the nucleus seeds of a variety of cereal crops is - 1. Ear-to-row method 2. Backcross method 3. Apomixis 4. Advanced-backcross method A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
83	383	Replacing old seeds with new ones is important in maintaining or enhancing the production of a crop. Usually, the higher the seed replacement rate, the better the production. In the case of a hybrid of a crop, the seed replacement rate is - 1. 25% 2. 50% 3. 75% 4. 100% A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
84	384	During hybrid seed production, detasseling is done to avoid self-pollination. In which of the following crops, detasselssing is done during hybrid seed production ? 1. Grain sorghum 2. Pearl millet 3. Maize 4. Wild rice A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
85	385		4.0	1.00

		Which one of the following terminology does NOT represent the seed dispersal mechanism in crops/ plants ? 1. Autochory 2. Hydrochory 3. Zerochory 4. Zoochory A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
86	386	The plant pigment, which is associated with the photoperiodism in plants is - 1. Chlorophyll 2. Lycophyll 3. Xanthophyll 4. Phytochrome A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
87	387		4.0	1.00

A seed technologist placed a set of 100 seeds for a germination test. After 8 days, she found that 70 seeds germinated and 30 seeds did not. The most probable reasons for the no germination of these 30 seeds are -

(A) The seeds were not viable at all

(B) The seed coat was impermeable

(C) The seed coat was permeable but the seeds were dead

(D) The seeds were viable but the conditions for the germination were not favorable

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

88	388	Given below are the statements about the pollination behavior of crop plants. Find out the cluster of the ***most appropriate*** statements (A) Dicliny and dichogamy favors self-pollination (B) Maize crop is protandry in nature (C) Protandry and protogyny favors cross-pollination (D) Pearl millet is protogyny in nature Choose the ***correct*** answer from the options given below : 1. (A), (B) and (C) only. 2. (A), (B) and (D) only. 3. (A), (C) and (D) only. 4. (B), (C) and (D) only. A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
89	389	Given below is a set of statements about 'Field counts' conducted during the inspection of the seed production field. Select the group of the **most *appropriate*** statements - (A) It is necessary to take a minimum of 5 counts for up to 2 ha seed production field and one additional count for every additional area of 2 ha or part there. (B) For a seed production area of 6 to 8 ha, the minimum number of counts to be made is 8. (C) Number of plants or heads per count in sunflowers is 1100. (D) Number of plants or heads per count in soybean is 1000. Choose the ***correct*** answer from the options given below : 1. (A), (B) and (C) only. 2. (A), (B) and (D) only. 3. (A), (C) and (D) only. 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
90	390		4.0	1.00

The considerations that prompted the development of the Plant Breeder's Rights (PBR) system in India include -

(A) The development of a crop variety is an innovation and it is an intellectual property, which should be protected.

(B) It encourages plant breeders by providing economic incentives.

(C) In encourages the private sector to invest in plant breeding activities.

(D) Plant varieties are not absolutely stable and hence need protection.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question				
91	391		4.0	1.00

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

List-I (Name of the machine or components in a seed processing unit)	**List-II** (Type of operation it does)
(A) Electric color sorter	(I) Separate heavy seeds from lightweight materials or chaffy grains
(B) Inclined draper	(II) Separates off-colored seeds
(C) Pneumatic separator	(III) Size grade of seeds for precision planting
(D) Disc separator	(IV) Separation of smooth or round seeds from rough, flat, or elongated seeds

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

92	392		4.0	1.00

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

List-I (Name of International Organization)	**List-II** (Headquarters is located in)
(A) UNO	(I) Rome, Italy
(B) IMF	(II) Geneva, Switzerland
(C) WTO	(III) New York, USA
(D) FAO	(IV) Washington DC, USA

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question					
93	393			4.0	1.00

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

List-I (Name of crop diseases)	List-II (Name of the crops)
(A) Tikka disease	(I) Rice
(B) Stripe rust	(II) Pigeonpea
(C) Neck blast	(III) Wheat
(D) Fusarium wilt	(IV) Groundnut

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question					
94	394			4.0	1.00

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

List-I (Chemical)	List-II (Seed related tests)
(A) GA_3	(I) Seed viability
(B) Thiourea	(II) Seed germination
(C) 2,3,5-triphenyl tetrazolium chloride	(III) Seed longevity
(D) Calcium chloride	(IV) Seed dormancy

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

95 395 4.0 1.00

In India, the release of a new crop variety consists of the following four major steps. Arrange the steps in sequence from the start to the last.

(A) Identification of the superior strains in the Annual Workshop of the specific crop

(B) Development of an improved strain of a particular crop

(C) Evaluation of the improved strain in multilocation trial

(D) Release and notification of the crop variety by the variety release committee

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

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

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
96	396	Like in animals, in plants also, the embryo develops in a phased manner that happens in sequential order. Below is a list of various stages of embryogenesis in a model dicot plant (*Capsella bursapstoris*). Arrange them sequentially in the proper order of development. (A) Globular stage (B) Torpedo stage (C) Heart stage (D) Pro-embryo stage Choose the ***correct*** answer from the options given below : 1. (D), (A), (C), (B). 2. (D), (B), (C), (A). 3. (B), (A), (D), (C). 4. (C), (B), (D), (A). A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
97	397		4.0	1.00

Seed and fruit development in plants takes place step-by-step. Arrange the following steps in sequential order of development starting from the earliest to the latest one -

(A) Fertilized ovule develops into the seed

(B) Pollen lands on the stigma and grows a pollen tube down through the style to the ovary

(C) The ovary develops into fruit

(D) The nucleus of the pollen grain travels down the pollen tube and fertilizes the nucleus in the ovule

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question				
98	398	Given below are two statements : **Statement (I) :** Mature corn seed is exalbuminous. **Statement (II) :** A full-grown corn embryo contains a single cotyledon within it. In light of the above statements, choose the ***most appropriate*** 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. A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
99	399	Given below are two statements, one is labeled as **Assertion (A)** and the other one is labeled as **Reason (R)**. **Assertion (A) :** The seeds of wild-type soybean (*Glycine soja*) lives longer than the seeds of cultivated type (*G max* L.) **Reason (R) :** The wild-type soybean (*Glycine soja*) seeds are small, black, and have an impermeable seed coat with very little content of oil that might enhance the seed longevity. In light of the above statements, choose the ***most appropriate*** answer from the options given below. 1. Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**. 2. Both **(A)** and **(R)** are correct but **(R)** is NOT the correct explanation of **(A)**. 3. **(A)** is correct but **(R)** is not correct. 4. **(A)** is not correct but **(R)** is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
100	400	Given below are two statements : **Statement (I) :** Erect and flat flag leaves interrupt pollen dispersal leading to poor seed set in the rice hybrid seed production program. **Statement (II) :** The use of a 'flag leafless male sterile line' (lines without flag leaves) would increase the yield of hybrid seed production. In light of the above statements, choose the ***most appropriate*** answer from the options given below. 1. Both **Statement (I)** and **Statement (II)** are correct. 2. Both **Statement (I)** and **Statement (II)** are incorrect. 3. **Statement (I)** is correct but **Statement (II)** is incorrect. 4. **Statement (I)** is incorrect but **Statement (II)** is correct. A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
101	401	Which of the following is the scientific name of a major fiber crop cultivated in India ? 1. *Gossypium hirsutum* 2. *Corchorus olitorius* 3. *Cannabis sativa* 4. *Linum usitatissimum* A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
102	402	Given below are two statements, one is labelled as **Assertion (A)** and other one labelled as **Reason (R)**. **Assertion (A) :** Krishi Vigyan Kendras (KVKs) are agricultural training centers that provide technological support and guidance to farmers at the grassroot level. **Reason (R) :** KVKs are established by the Indian Council of Agricultural Research (ICAR) to disseminate the latest agricultural technologies to farmers through on-farm demonstrations, training programs, and other extension activities. In light of the above statements, choose the *correct* answer from the options given below. 1. Both **(A)** and **(R)** are true and **(R)** is the correct explanation of **(A)**. 2. Both **(A)** and **(R)** are true but **(R)** is NOT the correct explanation of **(A)**. 3. **(A)** is true but **(R)** is false. 4. **(A)** is false but **(R)** is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

103 | 403 | 4.0 | 1.00

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

Item	Purpose
(A) CBD	(I) Ensures the safe handling, transport, and use of LMOs resulting from modern biotechnology
(B) ITPGRFA	(II) Ensures the conservation and sustainable use of plant genetic resources for food and agriculture.
(C) Cartagena Protocol	(III) Access to genetic resources and the fair and equitable sharing of benefits arising from their utilization
(D) Nagoya Protocol	(IV) Promotes the conservation and sustainable use of biological diversity.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

104 | 404 | 4.0 | 1.00

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

List-I (Revolution event)	List-II (Associated with)
(A) Green revolution	(I) Milk
(B) White revolution	(II) Fish
(C) Blue revolution	(III) Wheat
(D) Yellow revolution	(IV) Oilseeds

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

105	405	Which of the following Geographical Indication is not matched correctly ? 1. Basmati rice- North India 2. Fazli mango - Maharashtra 3. Mysore betel leaf- Karnataka 4. Malabar pepper- Kerala A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

106	406		4.0	1.00

Match the following items

Legislation Name	Enactment Year
(A) The National Food Security Act	(I) 2001
(B) The PPV & FRA	(II) 2013
(C) The Biological Diversity Act	(III) 1966
(D) The National Seeds Act	(IV) 2002

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

107	407	Which of the following factors can NOT cause a population to deviate from Hardy-Weinberg equilibrium ? 1. Genetic drift 2. Gene flow 3. Mutations 4. Sexual reproduction A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

108	408		4.0	1.00

Given below are two statements :

Statement (I) : The Indian Institute of Horticultural Research (IIHR) is a constituent institute of the ICAR.

Statement (II) : The IIHR is primarily focused on research related to fruit, vegetable, and ornamental crops.

In light of the above statements, choose the ***most appropriate*** 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

109	409	'Vibrant Village Program' aimed at the development of Northern states of India was launched by the Indian government in April 2023 which will cover 2,967 villages in 46 blocks of 19 districts. Which of the following states are represented under this program: (A) Arunachal Pradesh and Sikkim (B) Haryana and Punjab (C) Union Territories of Ladakh and Jammu & Kashmir (D) Himachal Pradesh and Uttarakhand Choose the ***correct*** answer from the options given below: 1. (A), (B) and (C) only. 2. (A), (B) and (D) only. 3. (B), (C) and (D) only. 4. (A), (C) and (D) only. A1 : 1 A2 : 2	4.0	1.00

A3 : 3

A4 : 4

Objective Question

110 | 410 | 4.0 | 1.00

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

Assertion (A) : Genetic recombination is an important mechanism of increasing genetic diversity in sexually reproducing organisms.

Reason (R) : Genetic recombination occurs during meiosis when homologous chromosomes exchange genetic material through crossing over, resulting in new combinations of alleles in the gametes.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

111 | 411 | 4.0 | 1.00

Which one is NOT correct with respect to transpiration in plants ?

1. Transpiration is the process by which water is lost from the leaves of a plant in the form of water vapor.
2. Transpiration is an important process for regulating the temperature of a plant by cooling the leaves through the loss of water vapor.
3. Transpiration rates are influenced by environmental factors such as humidity, temperature, and wind speed.
4. Transpiration plays an important and direct role in the uptake of nutrients by plants from the soil.

A1 : 1

A2 : 2

A3 : 3

		A4 : 4		
Objective Question				
112	412	Which of the following is true regarding CRISPR-Cas9 gene editing in crops ? 1. It involves the insertion of foreign genes into the crop's genome. 2. It can only be used to delete genes, not modify them. 3. It allows for precise and targeted modifications to a crop's DNA. 4. It is a new technology but not for use in crop improvement. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
113	413	Choose the correct option for the chromosome number in ascending order in the following crops : (A) Rice (B) Pigeon pea (C) Groundnut (D) Wheat Choose the ***correct*** answer from the options given below : 1. (A), (D), (C) and (B) 2. (A), (B), (C) and (D) 3. (B), (A), (C) and (D) 4. (B), (A), (D) and (C) A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

114	414	Which of the following is true about the start codon in the genetic code dictionary ? 1. It is the same as one of the stop codons. 2. It codes primarily for the amino acid methionine. 3. The codon is UAG. 4. It codes for the amino acid valine. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
115	415	Given below are two statements : **Statement (I) :** During photosynthesis, light energy is used to produce ATP and NADPH during the light-dependent reactions. **Statement (II) :** ATP and NADPH produced in the light-dependent reactions are used to break down glucose into carbon dioxide and water during light-independent reactions. In light of the above statements, choose the ***most appropriate*** 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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
116	416		4.0	1.00

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

Assertion (A) : DNA replication is a semi-conservative process.

Reason (R) : In semi-conservative DNA replication, the two strands of DNA are separated, and each strand serves as a template for the synthesis of a new complementary strand. Therefore, each new double-stranded DNA molecule consists of one original strand and one newly synthesized strand.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

117	417	Which of the following molecular marker techniques is the best for studying genome-wide genetic variation in crop plants ? 1. RFLP 2. RAPD 3. AFLP 4. SNP A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

118	418		4.0	1.00

		The inflorescence of wheat is called 1. Rachis 2. Spike 3. Awns 4. Spadix A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
119	419	Given below are two statements : **Statement (I) :** Potato is an important cash crop for Indian farmers. **Statement (II) :** Potatoes are a versatile crop that can be used for food, feed, and industrial purposes. The crop has a high yield potential and can be grown in different agro-climatic conditions. In light of the above statements, choose the ***most appropriate*** 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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
120	420		4.0	1.00

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

List-I (Seed Class)		**List-II (Description)**	
(A)	Breeder seed	(I)	Seed produced from foundation seed
(B)	Foundation seed	(II)	Genetically pure source for breeder seed
(C)	Nucleus seed	(III)	Source for certified seed
(D)	Certified seed	(IV)	Produced from nucleus seed

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

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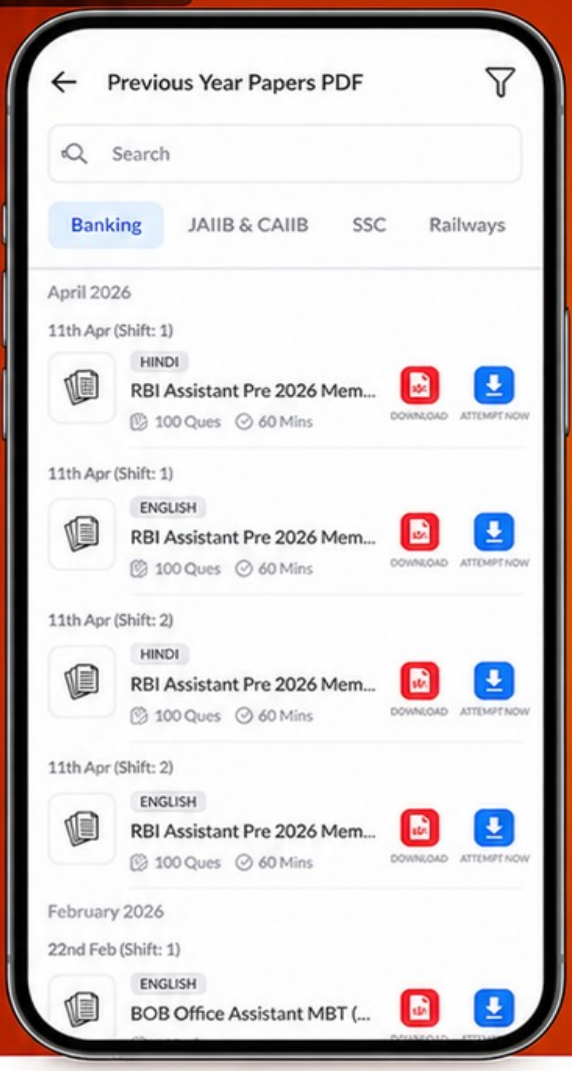

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ICAR's All India Entrance Examination July 2023

Final Answer Key

Exam Date : 09.07.2023 Shift : FIRST

Subject : PG - PLANT SCIENCES (2)

Question ID	Correct Option	Question ID	Correct Option	Question ID	Correct Option
301	4	356	4	411	4
302	3	357	1	412	3
303	2	358	4	413	3
304	3	359	1	414	2
305	2	360	3	415	3
306	2	361	1	416	1
307	3	362	1	417	4
308	4	363	2	418	2
309	2	364	4	419	1
310	4	365	4	420	2
311	4	366	3		
312	3	367	1		
313	4	368	3		
314	4	369	3		
315	4	370	3		
316	2	371	4		
317	1	372	1		
318	1	373	3		
319	3	374	1		
320	4	375	4		
321	1	376	3		
322	2	377	1		
323	4	378	3		
324	3	379	3		
325	2	380	2		
326	4	381	1		
327	3	382	1		
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347	1	402	1		
348	1	403	3		
349	3	404	2		
350	4	405	2		
351	2	406	4		
352	3	407	4		
353	1	408	1		
354	1	409	4		
355	4	410	1		