

# National Testing Agency

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| <b>Question Paper Name :</b> | PLANT SCIENCES 17th September 2021 Shift<br>1 |
| <b>Subject Name :</b>        | PLANT SCIENCES                                |
| <b>Creation Date :</b>       | 2021-09-17 15:50:16                           |
| <b>Duration :</b>            | 120   |
| <b>Total Marks :</b>         | 480   |
| <b>Display Marks:</b>        | Yes   |

## PLANT SCIENCES

|                                      |          |
|--------------------------------------|----------|
| <b>Group Number :</b>                | 1        |
| <b>Group Id :</b>                    | 19088970 |
| <b>Group Maximum Duration :</b>      | 0        |
| <b>Group Minimum Duration :</b>      | 120      |
| <b>Show Attended Group? :</b>        | No       |
| <b>Edit Attended Group? :</b>        | No       |
| <b>Break time :</b>                  | 0        |
| <b>Group Marks :</b>                 | 480      |
| <b>Is this Group for Examiner? :</b> | No       |

## PLANT SCIENCES -1

|                                |           |
|--------------------------------|-----------|
| <b>Section Id :</b>            | 190889144 |
| <b>Section Number :</b>        | 1         |
| <b>Section type :</b>          | Online    |
| <b>Mandatory or Optional :</b> | Mandatory |

|   |           |
|---|-----------|
| <b>Number of Questions :</b>  | 120       |
| <b>Number of Questions to be attempted :</b>                        | 120       |
| <b>Section Marks :</b>  | 480       |
| <b>Enable Mark as Answered Mark for Review and Clear Response :</b> | Yes       |
| <b>Sub-Section Number :</b>   | 1         |
| <b>Sub-Section Id :</b>   | 190889184 |
| <b>Question Shuffling Allowed :</b>                                 | Yes       |

**Question Number : 1 Question Id : 1908897702 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

If a woman carrier for color blindness marries to a color blind man and produce several children, the expected phenotype (color blind or normal) of the offspring would be -

1. All the offspring will be color blind
2. All male offspring will be color blind and all females will be normal
3. All male offspring will be normal and female will be color blind
4. All female offspring will be carriers of color blindness or color blind

**Options :**

19088930701. 1

19088930702. 2

19088930703. 3

19088930704. 4

**Question Number : 2 Question Id : 1908897703 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In Q-banding experiments, the light fluorescent band indicates that the chromosomal region is rich in base pairs-

1. T only
2. A only
3. A and T
4. G and C

**Options :**

19088930705. 1

19088930706. 2

19088930707. 3

19088930708. 4

**Question Number : 3 Question Id : 1908897704 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In genetic analysis, the effect of tight-linkage may create confusion with which of the following events?

1. Pseudoallele
2. Pleiotropy
3. Penetrance
4. Epistasis

**Options :**

19088930709. 1

19088930710. 2

19088930711. 3

19088930712. 4

**Question Number : 4 Question Id : 1908897705 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The genotype of a plant is AaBbDd. The genes A and B are linked in coupling phase with a map distance of 10cM. The gene D is present in different chromosome. Under such situation, the frequency of AbD gametes would be?

1.  $1/8$
2.  $9/40$
3.  $9/20$
4.  $1/40$

**Options :**

19088930713. 1

19088930714. 2

19088930715. 3

19088930716. 4

**Question Number : 5 Question Id : 1908897706 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

A tall greengram plant was crossed with a dwarf plant. All the F<sub>1</sub> plants were of intermediate height. The F<sub>2</sub> plants produced different phenotypic classes (plant height) in the ratio of 1:4:6:4:1. How many genes are involved in controlling the plant height?

1. 1
2. 2
3. 3
4. 4

**Options :**

19088930717. 1

19088930718. 2

19088930719. 3

19088930720. 4

**Question Number : 6 Question Id : 1908897707 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The horn development in sheep (horned sheep) is a suitable example of which of the following events?

1. Sex limited trait
2. Sex influenced trait
3. Sex linked trait
4. Holandric trait

**Options :**

19088930721. 1

19088930722. 2

19088930723. 3

19088930724. 4

**Question Number : 7 Question Id : 1908897708 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In a population of 100 individual, which is in Hardy-Weinberg equilibrium, the number of individual of different phenotypic classes are as follows: 64AA, 32 Aa and 4 aa. The frequency of A and a in this population would be-

1.  $A=0.64, a=0.36$
2.  $A=0.60, a=0.40$
3.  $A=0.80, a=0.20$
4.  $A=0.30, a=0.70$

**Options :**

19088930725. 1

19088930726. 2

19088930727. 3

19088930728. 4

**Question Number : 8 Question Id : 1908897709 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The gas used in gas delinting of cotton seeds is-

1. Dry CO<sub>2</sub>
2. Nitric oxide
3. Sulphur di-oxide
4. Dry hydrochloric acid

**Options :**

19088930729. 1

19088930730. 2

19088930731. 3

19088930732. 4

**Question Number : 9 Question Id : 1908897710 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In case of okra or bhindi (*Abelmoschus esculentus*) seeds, the minimum per cent of pure seeds for certification is:

1. 99
2. 98
3. 97
4. 96

**Options :**

19088930733. 1

19088930734. 2

19088930735. 3

19088930736. 4

**Question Number : 10 Question Id : 1908897711 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The recommended method for seed germination test in mustard is-

1. Sand method
2. Top of paper method
3. Between paper method
4. Sowing in field

**Options :**

19088930737. 1

19088930738. 2

19088930739. 3

19088930740. 4

**Question Number : 11 Question Id : 1908897712 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The electrical conductivity (EC) test in seed testing gives a clear indication of-

1. Dehydrogenase activity
2. Alpha-amylase activity
3. Integrity of cell membrane
4. Glutamic acid decarboxylase activity

**Options :**

19088930741. 1

19088930742. 2

19088930743. 3

19088930744. 4

**Question Number : 12 Question Id : 1908897713 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The most common secondary structure of protein molecule is-

1. Beta helix
2. Gamma helix
3. Alpha helix
4. Delta helix

**Options :**

19088930745. 1

19088930746. 2

19088930747. 3

19088930748. 4

**Question Number : 13 Question Id : 1908897714 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The Ramsar Convention is an international treaty for the conservation and utilization of-

1. Dry land
2. Wet land
3. Rainforest
4. Desert

**Options :**

19088930749. 1

19088930750. 2

19088930751. 3

19088930752. 4

**Question Number : 14 Question Id : 1908897715 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Development of seedless fruit would not be useful in case of-

1. Mango
2. Grape
3. Orange
4. Pomegranate

**Options :**

19088930753. 1

19088930754. 2

19088930755. 3

19088930756. 4

**Question Number : 15 Question Id : 1908897716 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following represents 'vertisol'

1. Black cotton soil
2. Sandy loam sodic soil
3. Submontane (Tarai) soil
4. Red loamy soil

**Options :**

19088930757. 1

19088930758. 2

19088930759. 3

19088930760. 4

**Question Number : 16 Question Id : 1908897717 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Color of the seed tag used in Foundation seed is-

1. Azure Blue
2. White
3. Golden yellow
4. Red

**Options :**

19088930761. 1

19088930762. 2

19088930763. 3

19088930764. 4

**Question Number : 17 Question Id : 1908897718 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Colchicine is primarily obtained from which part(s) of the plant-

1. Root
2. Shoot apex
3. Mature leaves
4. Corm and seeds

**Options :**

19088930765. 1

19088930766. 2

19088930767. 3

19088930768. 4

**Question Number : 18 Question Id : 1908897719 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

On average, how many fragments would a restriction enzyme, which recognizes a specific 5 base sequence in the DNA, would produce from a double-stranded bacteriophage genome of size 5252bp?

1. About 3
2. About 5
3. About 7
4. About 9

**Options :**

19088930769. 1

19088930770. 2

19088930771. 3

19088930772. 4

**Question Number : 19 Question Id : 1908897720 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The concept of chromosomal non-disjunction was given by-

1. T. H. Morgan
2. A. H. Sturtevant
3. H. E. Muller
4. C. B. Bridges

**Options :**

19088930773. 1

19088930774. 2

19088930775. 3

19088930776. 4

**Question Number : 20 Question Id : 1908897721 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** : Soils of North-East India are primarily acidic in nature.

**Reason R** : Among others, the most common element in the soils of North-East India is 'Ca', which contributes towards acidity of the soil.

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

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

**Options :**

19088930777. 1

19088930778. 2

19088930779. 3

19088930780. 4

**Question Number : 21 Question Id : 1908897722 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** : Flag leaf clipping in hybrid seed production in rice promotes higher seed setting.

**Reason R** : Flag leaf of rice intercepts more sunlight and facilitates accumulation of more photosynthates in the seeds as it is nearer to the panicle.

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

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

**Options :**

19088930781. 1

19088930782. 2

19088930783. 3

19088930784. 4

**Question Number : 22 Question Id : 1908897723 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** : Magnetic separator in seed processing unit separate the seeds based on seed surface texture and stickiness of the seeds

**Reason R** : Insect-damaged and partially filled seeds may appear to be same as the normal seeds in shape and size, but it varies in their specific gravity.

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

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

**Options :**

19088930785. 1

19088930786. 2

19088930787. 3

19088930788. 4

**Question Number : 23 Question Id : 1908897724 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 :** In reciprocal recurrent selection, the two populations so developed can be used as synthetic variety.

**Reason R :** In reciprocal recurrent selection, the GCA of both the population is improved simultaneously.

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

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

**Options :**

19088930789. 1

19088930790. 2

19088930791. 3

19088930792. 4

**Question Number : 24 Question Id : 1908897725 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 :** *Brassica juncea* is an allotetraploid having AABB genome

**Reason R :** *Brassica juncea* is produced when *B nigra* is crossed to *B campestris*

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

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

**Options :**

19088930793. 1

19088930794. 2

19088930795. 3

19088930796. 4

**Question Number : 25 Question Id : 1908897726 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Cis-trans or complementation test results may be ambiguous, if-

- A. The mutations are dominant
- B. There is intragenic complementation
- C. The mutations belong to different genes with different phenotype
- D. There is polar mutation
- E. There is gene interaction

Choose the *correct* answer from the options given below

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

**Options :**

19088930797. 1

19088930798. 2

19088930799. 3

19088930800. 4

**Question Number : 26 Question Id : 1908897727 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The events happening during RNA processing are:

- A. Capping at the 5'-end.
- B. Proof-reading of the nascent mRNA.
- C. Splicing of the introns and joining of the exons.
- D. Deadenylation at the 3'-end.
- E. Addition of poly-A tail at the 3'-end.

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

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

**Options :**

19088930801. 1

19088930802. 2

19088930803. 3

19088930804. 4

**Question Number : 27 Question Id : 1908897728 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Chronological steps in the development of genotype and release of a crop variety

- A. Preliminary yield trial
- B. Genotype development
- C. Multilocation trial
- D. Notification of variety
- E. Identification of variety

Choose the *correct* answer from the options given below

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

**Options :**

19088930805. 1

19088930806. 2

19088930807. 3

19088930808. 4

**Question Number : 28 Question Id : 1908897729 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Chronological steps in the development of hybrid

- A. Development of inbreds
- B. Evaluation of the hybrid with check
- C. Testing for combining ability
- D. Morphological evaluation of inbreds
- E. Seed multiplication

Choose the *correct* answer from the options given below

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

**Options :**

19088930809. 1

19088930810. 2

19088930811. 3

19088930812. 4

**Question Number : 29 Question Id : 1908897730 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** The light-dependent reactions occur in the stroma in presence of light

**Statement II:** The light-independent reactions occur in the thylakoid in the absence of light

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

- 1. Both Statement I and Statement II are correct
- 2. Both Statement I and Statement II are incorrect
- 3. Statement I is correct but Statement II is incorrect
- 4. Statement I is incorrect but Statement II is correct

**Options :**

19088930813. 1

19088930814. 2

19088930815. 3

19088930816. 4

**Question Number : 30 Question Id : 1908897731 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** Matthias Schleiden and Theodor Schwann proposed the first two components of the 'cell theory'.

**Statement II:** Rudolf Virchow proposed the third component of the 'cell theory'.

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

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

**Options :**

19088930817. 1

19088930818. 2

19088930819. 3

19088930820. 4

**Question Number : 31 Question Id : 1908897732 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** Pre-1940, genes were considered to be like 'beads-on-string' and 'not-divisible'.

**Statement II:** In 1940, CP Oliver proved that the genes are divisible.

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

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

**Options :**

19088930821. 1

19088930822. 2

19088930823. 3

19088930824. 4

**Question Number : 32 Question Id : 1908897733 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** Plastids are site of purine synthesis.

**Statement II:** Cytosol is the site of pyrimidine synthesis.

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 :**

19088930825. 1

19088930826. 2

19088930827. 3

19088930828. 4

**Question Number : 33 Question Id : 1908897734 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** Presence of objectionable weed seed reduces the physiological quality of a seed lot.

**Statement II:** Seeds of objectionable weed have same shape and size as the main crop 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 :**

19088930829. 1

19088930830. 2

19088930831. 3

19088930832. 4

**Question Number : 34 Question Id : 1908897735 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Single cross hybrids can be used for a variety of purposes such as-

- A. Development of three-way cross hybrid.
- B. Development of composite variety.
- C. Development of double cross hybrid.
- D. Prediction of double cross hybrid.
- E. Back cross generation.

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

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

**Options :**

19088930833. 1

19088930834. 2

19088930835. 3

19088930836. 4

**Question Number : 35 Question Id : 1908897736 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

For estimation of mid-parent heterosis, the genotypes included in the trials are-

- A. F<sub>1</sub> hybrids
- B. Female parents
- C. Male parents
- D. Check variety
- E. Top cross hybrid

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

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

**Options :**

19088930837. 1

19088930838. 2

19088930839. 3

19088930840. 4

**Question Number : 36 Question Id : 1908897737 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Heterosis cannot be fixed, if it is obtained through-

- A. Apomixis
- B. Balanced lethal system
- C. Development of F<sub>1</sub> hybrid
- D. Development of synthetic variety
- E. Vegetative propagation

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

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

**Options :**

19088930841. 1

19088930842. 2

19088930843. 3

19088930844. 4

**Question Number : 37 Question Id : 1908897738 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Frequency of recombination between two genes is affected by-

- A. Coupling and repulsion phase of linkage
- B. Asynapsis and desynapsis
- C. Location of the gene with respect to the centromere
- D. Distance between two genes
- E. Translocation of the genes

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

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

**Options :**

19088930845. 1

19088930846. 2

19088930847. 3

19088930848. 4

**Question Number : 38 Question Id : 1908897739 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

| <b>List I</b>              | <b>List II</b>                    |
|----------------------------|-----------------------------------|
| <b>Human disease/trait</b> | <b>Onset of expression</b>        |
| A. Alkaptonuria            | I. Before birth                   |
| B. Blood groups            | II. About 1 year after birth      |
| C. Baldness                | III. Immediately after birth      |
| D. Rickets                 | IV. About 20-25 years after birth |

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

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

**Options :**

19088930849. 1

19088930850. 2

19088930851. 3

19088930852. 4

**Question Number : 39 Question Id : 1908897740 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

| <b>List I</b>                         | <b>List II</b>                       |
|---------------------------------------|--------------------------------------|
| <b>Theory or principle</b>            | <b>Whose name is associated with</b> |
| A. Central Dogma of molecular biology | I. James Watson and FHC Crick        |
| B. Chromosomal theory of inheritance  | II. George W Beadle and Edward Tatum |
| C. DNA double helical structure       | III. FHC Crick                       |
| D. One gene-one enzyme                | IV. Walter Sutton and Theodor Boveri |

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

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

**Options :**

19088930853. 1

19088930854. 2

19088930855. 3

19088930856. 4

**Question Number : 40 Question Id : 1908897741 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                                   |
|-------------------------------|---|
| Crop                          | Isolation distance (m) in certified seeds |
| A. Wheat                      | I. 1000                                   |
| B. Composite variety of maize | II. 100                                   |
| C. Radish                     | III. 3                                    |
| D. Pigeonpea                  | IV. 200                                   |

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

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

**Options :**

19088930857. 1

19088930858. 2

19088930859. 3

19088930860. 4

**Question Number : 41 Question Id : 1908897742 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          |
|-----------|------------------|
| Sex index | Sexual phenotype |
| A. 1.0    | I. Male          |
| B. 0.5    | II. Intersex     |
| C. 0.67   | III. Super male  |
| D. 0.33   | IV. Female       |

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

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

**Options :**

19088930861. 1

19088930862. 2

19088930863. 3

19088930864. 4

**Question Number : 42 Question Id : 1908897743 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

| <b>List I</b>                | <b>List II</b>           |
|------------------------------|--------------------------|
| <b>Objectionable weed</b>    | <b>Crop</b>              |
| A. <i>Argemone maxicana</i>  | I. Lucerne               |
| B. Johnson grass             | II. Rapeseed and mustard |
| C. <i>Cichorium inotybus</i> | III. Sorghum             |
| D. <i>Phalaris minor</i>     | IV. Wheat                |

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

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

**Options :**

19088930865. 1

19088930866. 2

19088930867. 3

19088930868. 4

**Question Number : 43 Question Id : 1908897744 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  |
|---------------------------------|--|
| Types of hybrid                 | Parental combinations of the crosses               |
| A. Three way cross hybrid       | I. (Inbred A x Inbred B) x Open pollinated variety |
| B. Modified single cross hybrid | II. Inbred A x Open pollinated variety             |
| C. Double top-cross hybrid      | III. (Inbred A x Inbred B) x Inbred C              |
| D. Top cross hybrid             | IV. (Inbred A x A') x Inbred B                     |

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

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

**Options :**

19088930869. 1

19088930870. 2

19088930871. 3

19088930872. 4

**Question Number : 44 Question Id : 1908897745 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

| <b>List I</b>           | <b>List II</b>                                    |
|-------------------------|---|
| <b>Particular item</b>  | <b>Description</b>                                |
| A. Arboratum            | I. Bio-geographic region with higher biodiversity |
| B. Herbarium            | II. Sum total of genes of a species               |
| C. Biodiversity hotspot | III. Botanical garden with trees and shrubs       |
| D. Germplasm            | IV. Collection of dried leaf specimen             |

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

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

**Options :**

19088930873. 1

19088930874. 2

19088930875. 3

19088930876. 4

**Question Number : 45 Question Id : 1908897746 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



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

| <b>List I</b>      | <b>List II</b>      |
|--------------------|---------------------|
| <b>Crop</b>        | <b>Ploidy level</b> |
| A. Rice            | I. Tetraploid       |
| B. Bread wheat     | II. Triploid        |
| C. Durum wheat     | III. Diploid        |
| D. Seedless banana | IV. Hexaploid       |

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

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

**Options :**

19088930877. 1

19088930878. 2

19088930879. 3

19088930880. 4

**Question Number : 46 Question Id : 1908897747 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        |
|--|----------------|
| ICAR institute                                     | Location of HQ |
| A. Indian Institute of Maize Research              | I. Karnal      |
| B. National Institute of Abiotic Stress Management | II. Hyderabad  |
| C. Indian Institute of Rice Research               | III. Ludhiana  |
| D. India Institute of Wheat and Barley Research    | IV. Baramati   |

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

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

**Options :**

19088930881. 1

19088930882. 2

19088930883. 3

19088930884. 4

**Question Number : 47 Question Id : 1908897748 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

| <b>List I</b>                          | <b>List II</b>            |
|--|---------------------------|
| <b>Name of International Institute</b> | <b>Major mandate crop</b> |
| A. ICRISAT                             | I. Wheat                  |
| B. IITA                                | II. Pigeonpea             |
| C. CIAT                                | III. Cassava              |
| D. CIMMYT                              | IV. Cowpea                |

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

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

**Options :**

19088930885. 1

19088930886. 2

19088930887. 3

19088930888. 4

**Question Number : 48 Question Id : 1908897749 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   |
|-----------------------------|---|
| Name of Scientist           | Significant contribution in major field                     |
| A. Hugo de Vries            | I. Coined the term mitosis                                  |
| B. W Flemming               | II. Semi-conservative mode of DNA replication               |
| C. C Stern                  | III. Mutation   |
| D. MS Meselson and FW Stahl | IV. Cytological basis of crossing over in <i>Drosophila</i> |

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

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

**Options :**

19088930889. 1

19088930890. 2

19088930891. 3

19088930892. 4

**Question Number : 49 Question Id : 1908897750 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is fiber yielding plant

1. *Triticum aestivum*
2. *Gossypium hirsutum*
3. *Lens culinaris*
4. *Glycine max*

**Options :**

19088930893. 1

19088930894. 2

19088930895. 3

19088930896. 4

**Question Number : 50 Question Id : 1908897751 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The Food and Agriculture Organization (FAO) of United Nations has declared

1. Cereals
2. Pulses
3. Millets
4. Oilseeds

**Options :**

19088930897. 1

19088930898. 2

19088930899. 3

19088930900. 4

**Question Number : 51 Question Id : 1908897752 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The acronym ITPGRFA stands for

1. International Trade on Plant Genetic Resources for Food and Agriculture
2. International Treaty on Plant Genetic Resources for Food and Agriculture
3. International Trade on Plant Genomic Resources for Food and Agriculture
4. International Treaty on Plant Genomic Resources for Food and Agriculture

**Options :**

19088930901. 1

19088930902. 2

19088930903. 3

19088930904. 4

**Question Number : 52 Question Id : 1908897753 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The combination of the following crops yields the staple food of India

1. Wheat-Barley-Oats
2. Rice-Wheat-Maize
3. Wheat-Pulses-Oilseeds
4. Rice-Wheat-Milletts

**Options :**

19088930905. 1

19088930906. 2

19088930907. 3

19088930908. 4

**Question Number : 53 Question Id : 1908897754 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Seed coat is derived from

1. Nucellus
2. Embryo
3. Endosperm
4. Testa

**Options :**

19088930909. 1

19088930910. 2

19088930911. 3

19088930912. 4

**Question Number : 54 Question Id : 1908897755 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** 'Import Permit' is an official document needed to introduce in India any plant genetic resources from other countries.

**Statement II:** The 'Import Permit' is signed by the Director General, ICAR.

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 :**

19088930913. 1

19088930914. 2

19088930915. 3

19088930916. 4

**Question Number : 55 Question Id : 1908897756 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** Growth regulators which control plant growth and development are called phytohormones.

**Statement II:** Apical meristems are responsible for growth in length of branches and roots.

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 :**

19088930917. 1

19088930918. 2

19088930919. 3

19088930920. 4

**Question Number : 56 Question Id : 1908897757 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** National Bureau of Animal Genetic Resources is located at Karnal.

**Statement II:** National Bureau of Fish Genetic Resources is located at Chennai.

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 :**

19088930921. 1

19088930922. 2

19088930923. 3

19088930924. 4

**Question Number : 57 Question Id : 1908897758 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Given below are two statements

**Statement I:** Rafi Ahmad Kidwai Award is bestowed by CSIR to a scientist of repute for contribution in the field of agriculture.

**Statement II:** ICAR awards Punjab Rao Deshmukh Woman Agricultural Scientist Award annually.

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 :**

19088930925. 1

19088930926. 2

19088930927. 3

19088930928. 4

**Question Number : 58 Question Id : 1908897759 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In sea urchin DNA, which is double stranded, 10% of the bases are shown to be cytosine (C). Based on this observation, the following were recorded

- A. Guanine (G) are 10%
- B. Adenine (A) are 40%
- C. Thymine (T) are 20%
- D. Purines are 50%
- E. Purine and pyrimidine are equal

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

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

**Options :**

19088930929. 1

19088930930. 2

19088930931. 3

19088930932. 4

**Question Number : 59 Question Id : 1908897760 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Most of the energy in the cells is liberated by oxidation of carbohydrates when

- A. Pyruvic acid is converted into sugar
- B. Pyruvic acid is converted into acetyl-CoA
- C. Sugar is converted into pyruvic acid
- D. Glucose is converted into alcohol and CO<sub>2</sub>
- E. Pyruvic acid is converted into CO<sub>2</sub> and H<sub>2</sub>O

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

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

**Options :**

19088930933. 1

19088930934. 2

19088930935. 3

19088930936. 4

**Question Number : 60 Question Id : 1908897761 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Recalcitrant seeds are

- A. Susceptible to desiccation
- B. Susceptible to freezing
- C. Tolerant to desiccation but susceptible to freezing
- D. Tolerant to freezing but susceptible to desiccation
- E. Tolerant to desiccation and freezing both

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

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

**Options :**

19088930937. 1

19088930938. 2

19088930939. 3

19088930940. 4

**Question Number : 61 Question Id : 1908897762 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Most commonly used enzymes for DNA manipulation include the following

A. Nucleases

B. Ligases

C. Polymerases

D. Kinases

E. Helicases

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

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

**Options :**

19088930941. 1

19088930942. 2

19088930943. 3

19088930944. 4

**Question Number : 62 Question Id : 1908897763 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is a form of *ex-situ* conservation

- A. Gene banks
- B. Tissue culture repositories
- C. National parks
- D. Biosphere reserves
- E. Botanical gardens

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

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

**Options :**

19088930945. 1

19088930946. 2

19088930947. 3

19088930948. 4

**Question Number : 63 Question Id : 1908897764 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. ICRI SAT  | I. London      |
| B. Kew Botanical Garden  | II. Chennai    |
| C. National Biodiversity Authority                             | III. New Delhi |
| D. Protection of Plant Varieties and Farmers' Rights Authority | IV. Patancheru |

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

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

**Options :**

19088930949. 1

19088930950. 2

19088930951. 3

19088930952. 4

**Question Number : 64 Question Id : 1908897765 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. Zeatin    | I. Auxin       |
| B. Picloram  | II. Amino acid |
| C. Thiamine  | III. Cytokinin |
| D. Glutamine | IV. Vitamin    |

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

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

**Options :**

19088930953. 1

19088930954. 2

19088930955. 3

19088930956. 4

**Question Number : 65 Question Id : 1908897766 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

| <b>List I</b>                           | <b>List II</b>                |
|---|-------------------------------|
| A. Discovery of human blood group       | I. B. McClintock              |
| B. Double helical model of DNA          | II. Crick, Watson and Wilkins |
| C. Genetic improvement of Mexican wheat | III. K. Landsteiner           |
| D. Mobile genetic elements in maize     | IV. N. Borlaug                |

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

**Options :**

19088930957. 1

19088930958. 2

19088930959. 3

19088930960. 4

**Question Number : 66 Question Id : 1908897767 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

| <b>List I</b>   | <b>List II</b> |
|---|----------------|
| A. Main product of photosynthesis                         | I. Chloroplast |
| B. The energy-carrying molecule that cells use for energy | II. Autotrophs |
| C. Organisms that make their own food                     | III. ATP       |
| D. Organelle of photosynthesis                            | IV. Glucose    |

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

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

**Options :**

19088930961. 1

19088930962. 2

19088930963. 3

19088930964. 4

**Question Number : 67 Question Id : 1908897768 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. Protogyny   | I. Differential maturation of male and female flowers |
| B. Androgyny   | II. Stamen matures before pistil                      |
| C. Dichogamy   | III. Pistil matures before stamen                     |
| D. Cleistogamy | IV. Flower does not open                              |

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

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

**Options :**

19088930965. 1

19088930966. 2

19088930967. 3

19088930968. 4

**Question Number : 68 Question Id : 1908897769 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. Rice    | I. GMO hybrid          |
| B. Tobacco | II. GMO for shelf life |
| C. Tomato  | III. GMO for vitamin A |
| D. Cotton  | IV. First GMO          |

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

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

**Options :**

19088930969. 1

19088930970. 2

19088930971. 3

19088930972. 4

**Question Number : 69 Question Id : 1908897770 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. Grow-out test       | I. Test for vigour of the seed      |
| B. Osmotic stress test | II. Test for genetic purity of seed |
| C. Viability test      | III. Test for aliveness of seed     |
| D. Brick gravel test   | IV. Test using PEG and mannitol     |

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

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

**Options :**

19088930973. 1

19088930974. 2

19088930975. 3

19088930976. 4

**Question Number : 70 Question Id : 1908897771 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:** In the Watson-Crick model of DNA, each turn of the helix is the length of 10 base pairs.

**Reason R:** Each complete turn of the double-stranded DNA helix is  $3.4 \text{ \AA}$  long.

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

**Options :**

19088930977. 1

19088930978. 2

19088930979. 3

19088930980. 4

**Question Number : 71 Question Id : 1908897772 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:** In DUS trials, the number and nature of varieties largely determines the use of experimental design.

**Reason R:** Randomized Incomplete Block Design is the most used experimental design in DUS trials.

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

**Options :**

19088930981. 1

19088930982. 2

19088930983. 3

19088930984. 4

**Question Number : 72 Question Id : 1908897773 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 :** While alloinfection increases disease incidence, the autoinfection increases the disease severity

**Reason R :** Neither autoinfection nor alloinfection is sufficient to cause disease epidemics

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

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

**Options :**

19088930985. 1

19088930986. 2

19088930987. 3

19088930988. 4

**Question Number : 73 Question Id : 1908897774 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 :** Plant disease symptoms need not harbor the pathogen propagules always

**Reason R :** Crown gall harbors *Agrobacterium tumefaciens*

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

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

**Options :**

19088930989. 1

19088930990. 2

19088930991. 3

19088930992. 4

**Question Number : 74 Question Id : 1908897775 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** American grapevine root stock helped the French farmers to control root aphids

**Statement II:** Root aphid resistant American root stock was also resistant to grapevine downy mildew

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

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

**Options :**

19088930993. 1

19088930994. 2

19088930995. 3

19088930996. 4

**Question Number : 75 Question Id : 1908897776 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 :** Phytoplasma is a motile bacterium

**Reason R :** Phytoplasma is transmitted by leaf hopper

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

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

**Options :**

19088930997. 1

19088930998. 2

19088930999. 3

19088931000. 4

**Question Number : 76 Question Id : 1908897777 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** Viruses are the only pathogens transmitted by nematodes

**Statement II:** Biotic agents associated with plants are known to transmit plant pathogens

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

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

**Options :**

19088931001. 1

19088931002. 2

19088931003. 3

19088931004. 4

**Question Number : 77 Question Id : 1908897778 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** : Antibiotics are sterilized by bacteriological filters but not by heat

**Reason R** : Antibiotics are thermo labile compounds

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

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

**Options :**

19088931005. 1

19088931006. 2

19088931007. 3

19088931008. 4

**Question Number : 78 Question Id : 1908897779 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following belong to Oomycetes

1. *Pestalotia*
2. *Phyllosticta*
3. *Plasmapara*
4. *Puccinia*

**Options :**

19088931009. 1

19088931010. 2

19088931011. 3

19088931012. 4

**Question Number : 79 Question Id : 1908897780 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Rot diseases are caused by

1. *Fusarium oxysporum*
2. *Fusarium solani*
3. *Ralstonia solanacearum*
4. *Ralstonia pseudosolanacearum*

**Options :**

19088931013. 1

19088931014. 2

19088931015. 3

19088931016. 4

**Question Number : 80 Question Id : 1908897781 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** True fungi is typically terrestrial-adapted organisms.

**Statement II:** True fungi possess chitin in the cell wall.

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

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

**Options :**

19088931017. 1

19088931018. 2

19088931019. 3

19088931020. 4

**Question Number : 81 Question Id : 1908897782 Question Type : MCQ Option Shuffling : No Is**



**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following plant disease was responsible for environmental disturbances impacting even the wildlife

1. Late blight of potato
2. Chestnut blight
3. Downy mildew of grapevine
4. Southern Corn blight

**Options :**

19088931021. 1

19088931022. 2

19088931023. 3

19088931024. 4

**Question Number : 82 Question Id : 1908897783 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Light pathway of a typical microscope consists of several items, viz.,

- A. Light source to Mirror
- B. Field Diaphragm to Condensor
- C. Stage to Specimen
- D. Objective to Body
- E. Ocular to Eye/Camera

Choose the *correct* answer from the options given below

1. Light path is A to C to B to D to E
2. Light path is A to D to C to B to E
3. Light path is A to B to C to D to E
4. Light path is A to E to C to B to D

**Options :**

19088931025. 1

19088931026. 2

19088931027. 3

19088931028. 4

**Question Number : 83 Question Id : 1908897784 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** Horizontal and Vertical Resistance defend crop plants against pathogens

**Statement II:** Horizontal Resistance is more frequently exploited in resistance breeding programme than Vertical Resistance

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

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

**Options :**

19088931029. 1

19088931030. 2

19088931031. 3

19088931032. 4

**Question Number : 84 Question Id : 1908897785 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Plant pathogens can be detected and identified using ELISA and PCR

- A. ELISA based detection is more useful for viral pathogen detection than bacterial pathogens
- B. Fungal diseases are more amenable for ELISA based detection than plant viruses
- C. Bacterial pathogens are more amenable for PCR based detection than plant viruses
- D. Bacterial pathogens are more amenable for PCR based detection than fungal pathogens
- E. Phytoplasma is more amenable for PCR based detection than ELISA

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

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

**Options :**

19088931033. 1

19088931034. 2

19088931035. 3

19088931036. 4

**Question Number : 85 Question Id : 1908897786 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Wilt diseases are caused by

- 1. Heat
- 2. Drought
- 3. Bacteria and Fungi
- 4. Viroids

**Options :**

19088931037. 1

19088931038. 2

19088931039. 3

19088931040. 4

**Question Number : 86 Question Id : 1908897787 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** : Foliar plant pathogen produce pigmented and colored spores

**Reason R** : The dark pigmentation helps the pathogens to adapt on foliar parts to withstand high radiations

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

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

**Options :**

19088931041. 1

19088931042. 2

19088931043. 3

19088931044. 4

**Question Number : 87 Question Id : 1908897788 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. Chlorosis   | I. Fire blight of apple       |
| B. Hyperplasia | II. Mosaic disease of tobacco |
| C. Epinasty    | III. Bacterial wilt of tomato |
| D. Etiolation  | IV. Crown gall of rose        |
| E. Necrosis    | V. Bakanae disease of rice    |

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

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

**Options :**

19088931045. 1

19088931046. 2

19088931047. 3

19088931048. 4

**Question Number : 88 Question Id : 1908897789 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. Anton de Bary   | I. Gene for Gene hypothesis      |
| B. M.W. Beijerinck | II. Late blight of potato        |
| C. T. J. Burrell   | III. Bacterial disease of plants |
| D. E. J. Bulter    | IV. Viruses                      |
| E. H.J. Flor       | V. Imperial Mycologist           |

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

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

**Options :**

19088931049. 1

19088931050. 2

19088931051. 3

19088931052. 4

**Question Number : 89 Question Id : 1908897790 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Rust diseases are caused by

A. Puccinia

B. Albugo

C. Cephalerosus

D. Uromyces

E. Gymnosporangium

Choose the *correct* answer from the option given below

1. Puccinia causes rust only on wheat
2. Albugo causes rust on mustards
3. Cephalerosus causes rust on barley
4. Uromyces and Gymnosporangium causes rust on tomato

**Options :**

19088931053. 1

19088931054. 2

19088931055. 3

19088931056. 4

**Question Number : 90 Question Id : 1908897791 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Panama wilt of banana caused by *Fusarium oxysporum* f. sp. *cubense* is an internationally known plant disease

- A. Gros Michel variety of banana is susceptible to race 1
- B. Gros Michel variety of banana is resistant to race 1
- C. Cavendish variety of banana is susceptible to race 4
- D. Cavendish variety of banana is resistant to race 4
- E. Both Gros Michel and Cavendish are susceptible to race 1

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

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

**Options :**

19088931057. 1

19088931058. 2

19088931059. 3

19088931060. 4

**Question Number : 91 Question Id : 1908897792 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 :** Barbery is an alternate host for *Puccinia graminis* f. sp. *tritici*

**Reason R :** Barbery play key role in rust epidemics in India

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

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

**Options :**

19088931061. 1

19088931062. 2

19088931063. 3

19088931064. 4

**Question Number : 92 Question Id : 1908897793 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

**Match List I with List II**

| <b>List I</b> | <b>List II</b> |
|---------------|----------------|
| A. ITCC       | I. Belgium     |
| B. MTCC       | II. England    |
| C. NCPPB      | III. New Delhi |
| D. ATCC       | IV. Chandigarh |
| E. LMG        | V. USA         |

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

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

**Options :**

19088931065. 1

19088931066. 2

19088931067. 3

19088931068. 4

**Question Number : 93 Question Id : 1908897794 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Given below are two statements

**Statement I:** Plant viruses are transmitted by insects

**Statement II:** Only sucking insects are capable of transmitting plant viruses

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

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

**Options :**

19088931069. 1

19088931070. 2

19088931071. 3

19088931072. 4

**Question Number : 94 Question Id : 1908897795 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Motile infective propagules are produced by

- A. *Pythium*
- B. *Phytophthora*
- C. *Xanthomonas*
- D. *Ralstonia*
- E. Nematodes

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

1. *Pythium* and *Phytophthora* possess pili
2. *Pythium* and *Phytophthora* possess fimbria
3. Nematodes have flagella
4. *Xanthomonas*, and *Ralstonia* possess flagella

**Options :**

19088931073. 1

19088931074. 2

19088931075. 3

19088931076. 4

**Question Number : 95 Question Id : 1908897796 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** : Polycyclic diseases are known to cause plant disease epidemics

**Reason R** : Polycyclic disease inciting pathogens produce multiplicity of infections in short time

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

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

**Options :**

19088931077. 1

19088931078. 2

19088931079. 3

19088931080. 4

**Question Number : 96 Question Id : 1908897797 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Powdery mildew diseases of crop plants are incited by

1. Fungal Biotrophs
2. Bacterial Biotrophs
3. Fungal Hemibiotrophs
4. Fungal Necrotrophs

**Options :**

19088931081. 1

19088931082. 2

19088931083. 3

19088931084. 4

**Question Number : 97 Question Id : 1908897798 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Arrange the following organelles starting from the center to periphery of the cell

- A. Golgi apparatus
- B. Nucleolus
- C. Rough endoplasmic reticulum
- D. Cell wall
- E. Plasma membrane

Choose the *correct* answer from the options given below

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

**Options :**

19088931085. 1

19088931086. 2

19088931087. 3

19088931088. 4

**Question Number : 98 Question Id : 1908897799 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following cell organelle does not contain DNA

1. Lysosome
2. Mitochondria
3. Chloroplast
4. Nucleus

**Options :**

19088931089. 1

19088931090. 2

19088931091. 3

19088931092. 4

**Question Number : 99 Question Id : 1908897800 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following statements are true while comparing prokaryotes and eukaryotes

- A. Prokaryotes have 70S ribosomes, eukaryotes have 80S ribosomes.
- B. Nuclear material is linear in both prokaryotes and eukaryotes.
- C. Meiosis is the characteristic of eukaryotes.
- D. Genetic exchange occurs in both prokaryotes and eukaryotes.
- E. Nuclear membrane is present in both prokaryotes and eukaryotes.

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

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

**Options :**

19088931093. 1

19088931094. 2

19088931095. 3

19088931096. 4

**Question Number : 100 Question Id : 1908897801 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following statements are true for Koch's postulates

- A. The microorganisms must be present in every case of the disease
- B. The microorganisms may not be present in every case of the disease
- C. The microorganisms must be isolated from the diseased host and grown in pure culture
- D. The specific disease must be reproduced on inoculation of a pure culture of microorganisms in the healthy susceptible host
- E. The microorganism must be recoverable once again from the inoculated susceptible host

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

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

**Options :**

19088931097. 1

19088931098. 2

19088931099. 3

19088931100. 4

**Question Number : 101 Question Id : 1908897802 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following require oxygen for aerobic respiration but can also grow under anaerobic conditions?

1. Strict anaerobic bacteria
2. Micro-aerophilic bacteria
3. Facultative anaerobic bacteria
4. Aerobic bacteria

**Options :**

19088931101. 1

19088931102. 2

19088931103. 3

19088931104. 4

**Question Number : 102 Question Id : 1908897803 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

| <b>List I</b>           | <b>List II</b>          |
|-------------------------|-------------------------|
| A. Dipicolinic acid     | I. Filter sterilization |
| B. Mycoplasmas          | II. Endospore           |
| C. Heat labile liquids  | III. Mollicutes         |
| D. Steam under pressure | IV. Autoclave           |

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

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

**Options :**

19088931105. 1

19088931106. 2

19088931107. 3

19088931108. 4

**Question Number : 103 Question Id : 1908897804 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following are the properties of Mollicutes

- A. Lack of a defined cell wall
- B. Resistance to penicillin
- C. Pleomorphic shape
- D. Resistance to tetracycline
- E. Parasitism on eukaryotic organisms

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

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

**Options :**

19088931109. 1

19088931110. 2

19088931111. 3

19088931112. 4

**Question Number : 104 Question Id : 1908897805 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** A phototrophic microorganism can derive all carbon requirements from the principal carbon source

**Statement II:** An auxotrophic microorganism requires one or more growth factors in addition to the principal carbon source

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

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

**Options :**

19088931113. 1

19088931114. 2

19088931115. 3

19088931116. 4

**Question Number : 105 Question Id : 1908897806 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Arrange the following events of phage replication in correct sequence

- A. Replication and synthesis
- B. Penetration
- C. Adsorption
- D. Lysis and release
- E. Assembly of phage particles

Choose the *correct* answer from the options given below

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

**Options :**

19088931117. 1

19088931118. 2

19088931119. 3

19088931120. 4

**Question Number : 106 Question Id : 1908897807 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 :** In lysogenic cycle the viral nucleic acid does not hamper the functions of host bacterium

**Reason R :** In lysogenic cycle the nucleic acid of phage gets incorporated into the host DNA and becomes a prophage, acting as a gene

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

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

**Options :**

19088931121. 1

19088931122. 2

19088931123. 3

19088931124. 4

**Question Number : 107 Question Id : 1908897808 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** Operon models of gene regulation are applicable to prokaryotes only

**Statement II:** Eukaryotic DNA contain intervening pieces of DNA called Introns

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

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

**Options :**

19088931125. 1

19088931126. 2

19088931127.3

19088931128.4

**Question Number : 108 Question Id : 1908897809 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. Pseudomureins            | I. Gram negative bacteria   |
| B. Cell Outer Membrane      | II. Bacteria                |
| C. Algae-fungus association | III. Induction of Nod genes |
| D. Flavonoids               | IV. Lichens                 |

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

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

**Options :**

19088931129.1

19088931130.2

19088931131.3

19088931132.4

**Question Number : 109 Question Id : 1908897810 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

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

| <b>List I</b>               | <b>List II</b>        |
|-----------------------------|-----------------------|
| A. <i>Sesbania rostrata</i> | I. <i>Azotobacter</i> |
| B. Vermi-composting         | II. <i>Anabaena</i>   |
| C. Heterocyst               | III. Green manure     |
| D. Cyst                     | IV. Earthworm         |

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

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

**Options :**

19088931133. 1

19088931134. 2

19088931135. 3

19088931136. 4

**Question Number : 110 Question Id : 1908897811 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following processes cause losses of nitrogen from the cultivated soils

- A. Leaching
- B. Volatilization
- C. Biological nitrogen fixation
- D. Denitrification
- E. Green manuring

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

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

**Options :**

19088931137. 1

19088931138. 2

19088931139. 3

19088931140. 4

**Question Number : 111 Question Id : 1908897812 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** Nitrification is the biological oxidation of ammonia to nitrates, in two steps

**Statement II:** Members of genus *Nitrobacter* are involved in the oxidation of nitrites to nitrates

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

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

**Options :**

19088931141. 1

19088931142. 2

19088931143. 3

19088931144. 4

**Question Number : 112 Question Id : 1908897813 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** : Rotation with legume crops can increase the nitrogen levels in the soil thus improving the soil fertility

**Reason R** : Legume crops harbor nitrogen fixing bacteria in the root nodules that can convert inert nitrogen from the atmosphere to plant usable form

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

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

**Options :**

19088931145. 1

19088931146. 2

19088931147. 3

19088931148. 4

**Question Number : 113 Question Id : 1908897814 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following can be used for surface sterilization of plant material

1. Sodium chloride
2. Sodium hydroxide
3. Sodium sulphate
4. Sodium hypochlorite

**Options :**

19088931149. 1

19088931150. 2

19088931151. 3

19088931152. 4

**Question Number : 114 Question Id : 1908897815 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Members of which of the nitrogen fixing genera form symbiotic associations with aquatic fern *Azolla*

1. *Nostoc*
2. *Anabaena*
3. *Azotobacter*
4. *Calothrix*

**Options :**

19088931153. 1

19088931154. 2

19088931155. 3

19088931156. 4

**Question Number : 115 Question Id : 1908897816 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following molecule is known as the energy currency of the cell

1. ATP
2. AMP
3. NADH
4. FADH<sub>2</sub>

**Options :**

19088931157. 1

19088931158. 2

19088931159. 3

19088931160. 4

**Question Number : 116 Question Id : 1908897817 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following are NOT chain initiation codons

- A. UAA
- B. UAG
- C. UGA
- D. AUG
- E. GUG

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

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

**Options :**

- 19088931161. 1
- 19088931162. 2
- 19088931163. 3
- 19088931164. 4

**Question Number : 117 Question Id : 1908897818 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Ideal C : N ratio of the mature compost is

1. <20:1
2. 35:1
3. 60:1
4. 100:1

**Options :**

- 19088931165. 1
- 19088931166. 2
- 19088931167. 3
- 19088931168. 4



**Question Number : 118 Question Id : 1908897819 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** Fermentation of cattle dung produces biogas which can be used for cooking, and the slurry produced can be used as organic manure.

**Statement II:** Ethane is the primary constituents of biogas.

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

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

**Options :**

19088931169. 1

19088931170. 2

19088931171. 3

19088931172. 4

**Question Number : 119 Question Id : 1908897820 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** National Agriculturally Important Microbial Culture Collection (NAIMCC) is located in Mau Nath Bhanjan, Uttar Pradesh

**Statement II:** NAIMCC has acquired the status of International Depository Authority under Budapest treaty in 2020

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

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

**Options :**

19088931173. 1

19088931174. 2

19088931175. 3

19088931176. 4

**Question Number : 120 Question Id : 1908897821 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. National Bureau of Plant Genetic Resources (NBPGR)             | I. Karnal   |
| B. National Bureau of Animal Genetic Resources (NBAGR)            | II. Lucknow |
| C. National Bureau of Fish Genetic Resources (NBFGR)              | III. Delhi  |
| D. National Bureau of Soil survey and Land use Planning (NBSSLUP) | IV. Nagpur  |

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

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

**Options :**

19088931177.1

19088931178.2

19088931179.3

19088931180.4