

National Testing Agency

Question Paper Name : Crop Science 12th Oct 2020 Shift 2
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Crop Science

Group Number : 1
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Show Attended Group? : No
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Group Marks : 200
Is this Group for Examiner? : No

Crop Science

Section Id : 210529170
Section Number : 1
Section type : Online
Mandatory or Optional : Mandatory
Number of Questions : 50
Number of Questions to be attempted : 50
Section Marks : 200
Mark As Answered Required? : Yes
Sub-Section Number : 1
Sub-Section Id : 210529421
Question Shuffling Allowed : Yes

**Question Number : 1 Question Id : 21052912321 Question Type : MCQ Option Shuffling : No Is
Question Mandatory : No
Correct Marks : 4 Wrong Marks : 1**

Diagram showing ancestral relationships and transmission of genetic traits over several generations in a family is known as

1. Molecular map
2. Pedigree
3. Genome map
4. Karyotype

Options :

21052948561. 1
21052948562. 2
21052948563. 3
21052948564. 4

Question Number : 2 Question Id : 21052912322 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Sequencing genomes & analyzing nucleotide sequences to identify genes and regulatory regions is the focus of

1. Structural genomics
2. Functional genomics
3. Comparative genomics
4. Transcriptomics

Options :

21052948565. 1
21052948566. 2
21052948567. 3
21052948568. 4

Question Number : 3 Question Id : 21052912323 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following molecular markers is NOT based on the technique of Polymerase Chain Reaction (PCR)?

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

Options :

21052948569. 1

21052948570. 2

21052948571. 3

21052948572. 4

Question Number : 4 Question Id : 21052912324 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In which of the following crops, the transgenic technology has been commercialized in India?

1. Cotton
2. Brinjal
3. Maize
4. Soybean

Options :

21052948573. 1

21052948574. 2

21052948575. 3

21052948576. 4

Question Number : 5 Question Id : 21052912325 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is a unit used in designating molecular weight of proteins?

1. Molar (M)
2. Kilogram (Kg)
3. Dalton (Da)
4. Angstrom (Å)

Options :

21052948577. 1

21052948578. 2

21052948579. 3

21052948580. 4

Question Number : 6 Question Id : 21052912326 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

One of the longitudinal subunits of a replicated chromosome is

1. Centromere
2. Chromatid
3. Telomere
4. Daughter chromosome

Options :

- 21052948581. 1
- 21052948582. 2
- 21052948583. 3
- 21052948584. 4

Question Number : 7 Question Id : 21052912327 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The genetic constitution of an organism is

1. Karyotype
2. Phenotype
3. Gamete
4. Genotype

Options :

- 21052948585. 1
- 21052948586. 2
- 21052948587. 3
- 21052948588. 4

Question Number : 8 Question Id : 21052912328 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A set of hereditary information encoded in the DNA of an organism, including both the protein-coding and non-protein coding sequences is

1. Gene
2. Genome
3. Phenotype
4. Genomic library

Options :

- 21052948589. 1
- 21052948590. 2
- 21052948591. 3
- 21052948592. 4

Question Number : 9 Question Id : 21052912329 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The application of statistics and statistical methods to biological problems is referred to as

1. Biometry
2. Bioinformatics
3. Eugenics
4. Biomathematics

Options :

21052948593. 1

21052948594. 2

21052948595. 3

21052948596. 4

Question Number : 10 Question Id : 21052912330 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A plant or animal whose genome carries a gene transferred from another species by recombinant DNA technology and expressed to produce a gene product is called

1. Hybrid organism
2. Genetically Modified Organism (GMO)
3. Genetically pure organism
4. High yielding organism

Options :

21052948597. 1

21052948598. 2

21052948599. 3

21052948600. 4

Question Number : 11 Question Id : 21052912331 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The diploid cell produced by the fusion of haploid gametic nuclei is

1. Blastula
2. Gastrula
3. Zygote
4. Embryo

Options :

- 21052948601. 1
- 21052948602. 2
- 21052948603. 3
- 21052948604. 4

Question Number : 12 Question Id : 21052912332 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

One of the possible alternative forms of a gene is called

- 1. Gamete
- 2. Genome
- 3. Genotype
- 4. Allele

Options :

- 21052948605. 1
- 21052948606. 2
- 21052948607. 3
- 21052948608. 4

Question Number : 13 Question Id : 21052912333 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The current CO₂ concentration in the atmosphere is

- 1. 300 ppm
- 2. 400 ppm
- 3. 600 ppm
- 4. 700 ppm

Options :

- 21052948609. 1
- 21052948610. 2
- 21052948611. 3
- 21052948612. 4

Question Number : 14 Question Id : 21052912334 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Plant hormone used to induce uniform ripening of banana is

1. Ethylene
2. ABA
3. GA₃
4. IAA

Options :

21052948613. 1
21052948614. 2
21052948615. 3
21052948616. 4

Question Number : 15 Question Id : 21052912335 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Light reactions of photosynthesis occur in

1. Thylakoids of chloroplast
2. Stroma of chloroplast
3. Cytoplasm of cell
4. Mitochondrial matrix

Options :

21052948617. 1
21052948618. 2
21052948619. 3
21052948620. 4

Question Number : 16 Question Id : 21052912336 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which one of the following plant nutrient elements is considered as a micronutrient?

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

Options :

21052948621. 1
21052948622. 2
21052948623. 3
21052948624. 4

Question Number : 17 Question Id : 21052912337 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The three major tissue systems that make up the plant body are:

1. Mesophyll; Ground tissue; Vascular tissue
2. Dermal tissue; Ground tissue; Vascular tissue
3. Vascular tissue; Xylem tissue; Phloem tissue
4. Vascular tissue; Spongy tissue; Mesophyll tissue

Options :

21052948625. 1

21052948626. 2

21052948627. 3

21052948628. 4

Question Number : 18 Question Id : 21052912338 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

An example of climacteric fruit is

1. Cherry
2. Citrus
3. Grape
4. Mango

Options :

21052948629. 1

21052948630. 2

21052948631. 3

21052948632. 4

Question Number : 19 Question Id : 21052912339 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Tubular tensions of the plasma membrane that traverse the cell wall and connect the cytoplasm of the adjacent cell are called:

1. Symplast
2. Apoplast
3. Plasmodesmata
4. Casparian strip

Options :

21052948633. 1

21052948634. 2

21052948635. 3

21052948636. 4

Question Number : 20 Question Id : 21052912340 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which one of the following is NOT a major factor influencing the water potential in plant cells?

1. Solute concentration
2. Pressure potential
3. Gravity
4. Cell wall thickness

Options :

21052948637. 1

21052948638. 2

21052948639. 3

21052948640. 4

Question Number : 21 Question Id : 21052912341 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In plant cells, the process of glycolysis converts carbohydrates into:

1. Pyruvate
2. Oxaloacetate
3. Fumarate
4. Citrate

Options :

21052948641. 1

21052948642. 2

21052948643. 3

21052948644. 4

Question Number : 22 Question Id : 21052912342 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A protein pigment associated with photomorphogenesis is:

1. Chlorophyll
2. Carotenoid
3. Phytochrome
4. Flavonoids

Options :

- 21052948645. 1
- 21052948646. 2
- 21052948647. 3
- 21052948648. 4

Question Number : 23 Question Id : 21052912343 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In plants, lipid storing organelles are

1. Peroxisomes
2. Oleosomes
3. Glyoxysomes
4. Chloroplast

Options :

- 21052948649. 1
- 21052948650. 2
- 21052948651. 3
- 21052948652. 4

Question Number : 24 Question Id : 21052912344 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The hormone commonly used to induce rooting of hardwood cuttings in a nursery is

1. Auxin
2. Cytokinin
3. ABA
4. Brassinosteroid

Options :

- 21052948653. 1
- 21052948654. 2
- 21052948655. 3
- 21052948656. 4

Question Number : 25 Question Id : 21052912345 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A reaction in which an electrophile moves from one nucleophile to another is

1. Group transfer
2. Isomerization
3. Rearrangement
4. Elimination

Options :

21052948657. 1

21052948658. 2

21052948659. 3

21052948660. 4

Question Number : 26 Question Id : 21052912346 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The action of an enzyme can be affected by which of the following factors?

- A. pH
- B. Temperature
- C. Allosteric inhibitor
- D. Substrate concentration

Select the most appropriate answer from the options given below

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

Options :

21052948661. 1

21052948662. 2

21052948663. 3

21052948664. 4

Question Number : 27 Question Id : 21052912347 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A catalyst will make a reaction

1. Stop
2. Slow down
3. Speed up
4. Go in a different direction

Options :

- 21052948665. 1
- 21052948666. 2
- 21052948667. 3
- 21052948668. 4

Question Number : 28 Question Id : 21052912348 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

When a molecule is oxidized, it loses

1. Electron(s)
2. Proton(s)
3. Neutron(s)
4. Neutrino(s)

Options :

- 21052948669. 1
- 21052948670. 2
- 21052948671. 3
- 21052948672. 4

Question Number : 29 Question Id : 21052912349 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who discovered the structure of the ribosome and received the Nobel Prize in Chemistry?

1. David Baltimore
2. Watson & Crick
3. Linus Pauling
4. Venkatraman Ramakrishnan

Options :

- 21052948673. 1
- 21052948674. 2
- 21052948675. 3
- 21052948676. 4

Question Number : 30 Question Id : 21052912350 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

DNA contains Thymine and RNA contains Uracil. The difference in the structure of Thymine and Uracil is of a

1. Methyl group
2. Phosphate group
3. Acyl group
4. Amino group

Options :

- 21052948677. 1
- 21052948678. 2
- 21052948679. 3
- 21052948680. 4

Question Number : 31 Question Id : 21052912351 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Which regulatory mechanism of enzymes is most preferred and has emerged in evolution due to its quick action response?

1. Covalent modification
2. Allosteric modification
3. Enzyme expression
4. Enzyme degradation

Options :

- 21052948681. 1
- 21052948682. 2
- 21052948683. 3
- 21052948684. 4

Question Number : 32 Question Id : 21052912352 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

RNA is believed to have evolved prior to DNA based upon which of its following characteristics?

1. Stability
2. Ribose sugar
3. Enzymatic activity
4. Lack of Thymine

Options :

- 21052948685. 1
- 21052948686. 2
- 21052948687. 3
- 21052948688. 4

Question Number : 33 Question Id : 21052912353 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Glycogen is a short term storage form of

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

Options :

- 21052948689. 1
- 21052948690. 2
- 21052948691. 3
- 21052948692. 4

Question Number : 34 Question Id : 21052912354 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which one of the following is true about cofactors?

1. Break H-bonds in proteins
2. Facilitate enzyme activity
3. Increase activation energy
4. Link to ATP by high energy bonds

Options :

- 21052948693. 1
- 21052948694. 2
- 21052948695. 3

21052948696. 4

Question Number : 35 Question Id : 21052912355 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The separation of proteins on SDS-PAGE is based on their

1. Shape
2. Charge
3. Molecular mass
4. Concentration

Options :

21052948697. 1

21052948698. 2

21052948699. 3

21052948700. 4

Question Number : 36 Question Id : 21052912356 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The deficiency of Vitamin C causes

1. Rickets
2. Scurvy
3. Night blindness
4. Anemia

Options :

21052948701. 1

21052948702. 2

21052948703. 3

21052948704. 4

Question Number : 37 Question Id : 21052912357 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A pre-mRNA can give rise to a series of related but different mRNAs. This is an example of which one of the following molecular phenomena?

1. Alternative promoter
2. Alternative splicing
3. RNA editing
4. Gene editing

Options :

- 21052948705. 1
- 21052948706. 2
- 21052948707. 3
- 21052948708. 4

Question Number : 38 Question Id : 21052912358 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which one of the following analysis is the basis of genetic mapping?

1. Determining the DNA sequence of the organism
2. Linkage analysis
3. Restriction mapping
4. STS mapping

Options :

- 21052948709. 1
- 21052948710. 2
- 21052948711. 3
- 21052948712. 4

Question Number : 39 Question Id : 21052912359 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

How many alleles can a single nucleotide polymorphism practically have?

1. Four
2. Two
3. Multiple
4. Six

Options :

- 21052948713. 1
- 21052948714. 2
- 21052948715. 3
- 21052948716. 4

Question Number : 40 Question Id : 21052912360 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

The isoelectric point of an amino acid corresponds to

1. a specific pH
2. a specific number of amino and carboxyl groups
3. a specific concentration
4. a specific number of electrons

Options :

- 21052948717. 1
- 21052948718. 2
- 21052948719. 3
- 21052948720. 4

Question Number : 41 Question Id : 21052912361 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Which one of the following organelles is involved in photorespiration?

1. Nucleus
2. Ribosome
3. Peroxisome
4. Endoplasmic reticulum

Options :

- 21052948721. 1
- 21052948722. 2
- 21052948723. 3
- 21052948724. 4

Question Number : 42 Question Id : 21052912362 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1

Which one of the following enzymes is used in TILLING?

1. CELI
2. EcoRI
3. AluI
4. BamHI

Options :

21052948725. 1
21052948726. 2
21052948727. 3
21052948728. 4

Question Number : 43 Question Id : 21052912363 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is the expanded form of BLAST?

1. Basic Least Aligned Sequence Tool
2. Basic Local Alignment Search Tool
3. Broad Local Assignment Search Tool
4. Basic Local Alignment Sequence Tool

Options :

21052948729. 1
21052948730. 2
21052948731. 3
21052948732. 4

Question Number : 44 Question Id : 21052912364 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Catalase has an important role in which of the following cycles?

1. C3
2. C2
3. C4
4. CAM

Options :

21052948733. 1
21052948734. 2
21052948735. 3
21052948736. 4

Question Number : 45 Question Id : 21052912365 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is a non-coding regulatory RNA?

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

Options :

21052948737. 1
21052948738. 2
21052948739. 3
21052948740. 4

Question Number : 46 Question Id : 21052912366 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which one of the following techniques is also called as quantitative RT-PCR?

1. Real-Time PCR
2. Reverse transcriptase PCR
3. TAIL-PCR
4. Nested PCR

Options :

21052948741. 1
21052948742. 2
21052948743. 3
21052948744. 4

Question Number : 47 Question Id : 21052912367 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is the extended form of TILLING?

1. Targeting Induced Local Lesions in Genome
2. Targeting Induced Lateral Lesions in Gene
3. Targeting Induced Local Lesions in Gene
4. Targeting Induced Lateral Lesions in Genome

Options :

21052948745. 1
21052948746. 2
21052948747. 3
21052948748. 4

Question Number : 48 Question Id : 21052912368 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The single letter abbreviation for tryptophan is

1. T
2. W
3. R
4. Y

Options :

21052948749. 1

21052948750. 2

21052948751. 3

21052948752. 4

Question Number : 49 Question Id : 21052912369 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Starch consists of

- A. Amylose
- B. Amylopectin
- C. Gulose

Select the correct answer from the options given below

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

Options :

21052948753. 1

21052948754. 2

21052948755. 3

21052948756. 4

Question Number : 50 Question Id : 21052912370 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The enzyme involved in c DNA synthesis is

1. Reverse transcriptase
2. Taq Polymerase
3. Polynucleotide kinase
4. Terminal Transferase

Options :

21052948757. 1

21052948758. 2

21052948759. 3

21052948760. 4