

National Testing Agency

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Advances in Agricultural Engineering

Group Number :	1
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Is this Group for Examiner? :	No

Advances in Agricultural Engineering-1

Section Id :	603489135
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory

Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	603489228
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 6034895661 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Model bias is also known as the-

- 1. Coefficient of determination
- 2. Mean error of prediction
- 3. Root mean squared error
- 4. None of the above

Options :

- 60348920665. 1
- 60348920666. 2
- 60348920667. 3
- 60348920668. 4

Question Number : 2 Question Id : 6034895662 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Nitrogen and Phosphorus are available to plants at-

- 1. Highly acidic pH
- 2. Highly alkaline pH
- 3. Neutral pH
- 4. Highly acidic and alkaline pH

Options :

60348920669. 1

60348920670. 2

60348920671. 3

60348920672. 4

Question Number : 3 Question Id : 6034895663 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Soil color is measured by using-

1. Colorimeter
2. pH meter
3. Electromagnetic Induction
4. Munsell color chart

Options :

60348920673. 1

60348920674. 2

60348920675. 3

60348920676. 4

Question Number : 4 Question Id : 6034895664 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Brightness of a soil colour is determined via-

1. Hue
2. Value
3. Redness
4. None of the above

Options :

60348920677. 1

60348920678. 2

60348920679. 3

60348920680. 4

Question Number : 5 Question Id : 6034895665 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following is correct for Soil Texture?

1. It cannot be modified easily
2. It can be easily modified or changed
3. It is not a very important soil property
4. None of the above

Options :

60348920681. 1

60348920682. 2

60348920683. 3

60348920684. 4

Question Number : 6 Question Id : 6034895666 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In "Feel Method", silt appears as-

1. Gritty
2. Smooth and silky
3. Sticky
4. Rough

Options :

60348920685. 1

60348920686. 2

60348920687. 3

60348920688. 4

Question Number : 7 Question Id : 6034895667 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following is true?

1. Clay releases less nutrients by weathering than sand
2. Clay releases more nutrients by weathering than sand
3. Clay releases less nutrients by weathering than silt
4. None of the above

Options :

60348920689. 1

60348920690. 2

60348920691. 3

60348920692. 4

Question Number : 8 Question Id : 6034895668 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Loamy soils can be classified in which of the following classes?

1. Moderately coarse
2. Medium
3. Moderately fine
4. All of the above

Options :

60348920693. 1

60348920694. 2

60348920695. 3

60348920696. 4

Question Number : 9 Question Id : 6034895669 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In the sedimentation method, the order of settling of particles is-

1. Sand>Clay>Silt
2. Clay>Silt>Sand
3. Sand>Silt>Clay
4. Silt>Sand>Clay

Options :

60348920697. 1

60348920698. 2

60348920699. 3

60348920700. 4

Question Number : 10 Question Id : 6034895670 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Laser diffraction is a method of determining-

1. Soil texture
2. Soil structure
3. Soil CEC
4. Soil EC

Options :

60348920701. 1

60348920702. 2

60348920703. 3

60348920704. 4

Question Number : 11 Question Id : 6034895671 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Spatial arrangement of particles to complex aggregations, pores and channels is known as-

1. Soil texture
2. Soil structure
3. Soil consistency
4. Soil porosity

Options :

60348920705. 1

60348920706. 2

60348920707. 3

60348920708. 4

Question Number : 12 Question Id : 6034895672 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following do not represent a grade of soil structure?

1. Platy
2. Moderate
3. Weak
4. Strong

Options :

60348920709. 1

60348920710. 2

60348920711. 3

60348920712. 4

Question Number : 13 Question Id : 6034895673 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The structure which can be found in surface soils-rich in organic matter is-

1. Platy
2. Blocky
3. Spheroidal
4. Prismatic

Options :

60348920713. 1

60348920714. 2

60348920715. 3

60348920716. 4

Question Number : 14 Question Id : 6034895674 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In a variogram, no spatial autocorrelation is indicated by-

1. Pure nugget effect
2. Low nugget
3. High sill
4. None of the above

Options :

60348920717. 1

60348920718. 2

60348920719. 3

60348920720. 4

Question Number : 15 Question Id : 6034895675 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following is not true?

1. INM is an integral part of sustainable agriculture
2. Inorganic fertilizer is not a component of INM
3. INM keeps soil in healthy condition
4. Social acceptability is an important determinant of INM

Options :

60348920721. 1

60348920722. 2

60348920723. 3

60348920724. 4

Question Number : 16 Question Id : 6034895676 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In a variogram, the maximum distance at which data are correlated is known as-

1. Range
2. Nugget
3. Sill
4. Partial Sill

Options :

60348920725. 1

60348920726. 2

60348920727. 3

60348920728. 4

Question Number : 17 Question Id : 6034895677 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In a variogram, covariance and semivariance show-

1. Similar trend
2. Opposite trend
3. Independent to each other
4. Similar and opposite trend

Options :

60348920729. 1

60348920730. 2

60348920731. 3

60348920732. 4

Question Number : 18 Question Id : 6034895678 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

SCORPAN + e model was given by-

1. McBratney et al. (2003)
2. Jenny (1941)
3. Walkley and Black (1934)
4. None of the above

Options :

60348920733. 1

60348920734. 2

60348920735. 3

60348920736. 4

Question Number : 19 Question Id : 6034895679 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In SCORPAN+e model, N stands for-

1. Climate
2. Geology
3. Relief
4. Location

Options :

60348920737. 1

60348920738. 2

60348920739. 3

60348920740. 4

Question Number : 20 Question Id : 6034895680 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Altitude Above Channel and Topographic Wetness Index can be calculated from-

1. Climate model outputs
2. DEM
3. Remote sensing of vegetation
4. Age of soil

Options :

60348920741. 1

60348920742. 2

60348920743. 3

60348920744. 4

Question Number : 21 Question Id : 6034895681 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

According to the definition of a 'system', the output produced by it-

1. Doesn't affect the system at all
2. Affects the system performance
3. Affects the system boundary
4. Affects the system's purpose

Options :

60348920745. 1

60348920746. 2

60348920747. 3

60348920748. 4

Question Number : 22 Question Id : 6034895682 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which state of India, is in the category of high mechanization and high yield:

1. Punjab
2. Kerala
3. Maharashtra
4. Sikkim

Options :

60348920749. 1

60348920750. 2

60348920751. 3

60348920752. 4

Question Number : 23 Question Id : 6034895683 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Number of agricultural tractors (approximately) sold in India per year are-

1. 1 Lakh units/year
2. 4 Lakh units/year
3. 8 Lakh units/year
4. 20 Lakh units/year

Options :

60348920753. 1

60348920754. 2

60348920755. 3

60348920756. 4

Question Number : 24 Question Id : 6034895684 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The current national average consumption of plant nutrients per unit of gross cropped area is-

1. 75 kg/ha
2. 125 kg/ha
3. 195 kg/ha
4. 225 kg/ha

Options :

60348920757. 1

60348920758. 2

60348920759. 3

60348920760. 4

Question Number : 25 Question Id : 6034895685 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In terms of the national average production costs, the most expensive crop to grow is-

1. Potato
2. Cotton
3. Rice
4. Sugarcane

Options :

60348920761. 1

60348920762. 2

60348920763. 3

60348920764. 4

Question Number : 26 Question Id : 6034895686 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following is not a part of the 'indirect energy' classification?

1. Mechanical power
2. Sequestrated energy
3. Chemical energy
4. Biological energy

Options :

60348920765. 1

60348920766. 2

60348920767. 3

60348920768. 4

Question Number : 27 Question Id : 6034895687 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Agriculture in an ecosystem can be classified according to its social and demographic attributes. If such an ecosystem uses more than 80 GJ/ha (fossil fuel equivalent) energy input in agriculture, it should be classified as-

1. Low socioeconomic pressure and High demographic pressure
2. Low socioeconomic pressure and Low demographic pressure
3. High socioeconomic pressure and High demographic pressure
4. High socioeconomic pressure and Low demographic pressure

Options :

60348920769. 1

60348920770. 2

60348920771. 3

60348920772. 4

Question Number : 28 Question Id : 6034895688 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

To evaluate a system's performance, Eco-Efficiency is defined as a ratio of-

1. GHG emissions to Product output
2. GHG emissions to Production cost
3. Gross economic return to GHG emissions
4. Product output to Gross economic return

Options :

60348920773. 1

60348920774. 2

60348920775. 3

60348920776. 4

Question Number : 29 Question Id : 6034895689 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Imagine an intensive and highly mechanized agricultural ecosystem where a very small workforce is engaged and the labor productivity is very high, the Exosomatic-to-Endosomatic ratio of energies would normally be-

1. Low (<10)
2. High (>30)
3. Not depending on these two factors
4. Not defined for intensive agriculture

Options :

60348920777. 1

60348920778. 2

60348920779. 3

60348920780. 4

Question Number : 30 Question Id : 6034895690 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Metabolic transformation converts food energy into muscle energy in the human body. The correct term can be used for this energy is-

1. Exosomatic energy
2. Endosomatic energy
3. Sequestrated energy
4. Indirect energy

Options :

60348920781. 1

60348920782. 2

60348920783. 3

60348920784. 4

Question Number : 31 Question Id : 6034895691 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Throughput capacity of a paddy harvester is expressed by-

1. Area harvested per unit time
2. Cleaned rice output per unit time
3. Husk (and other foreign material) output per unit time
4. Total material flowing through harvester per unit time

Options :

60348920785. 1

60348920786. 2

60348920787. 3

60348920788. 4

Question Number : 32 Question Id : 6034895692 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Out of the country's overall total annual electricity consumption, the approximate percentage consumed in agriculture is-

1. < 5 %
2. 20 %
3. 50 %
4. 80 %

Options :

60348920789. 1

60348920790. 2

60348920791. 3

60348920792. 4

Question Number : 33 Question Id : 6034895693 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

India's position in the world agriculture is not the first in the production of-

1. Pulses
2. Banana
3. Jute
4. Wheat

Options :

60348920793. 1

60348920794. 2

60348920795. 3

60348920796. 4

Question Number : 34 Question Id : 6034895694 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The agricultural mechanization process is dynamic. The ultimate goal of mechanization is-

1. To introduce agricultural robots
2. To eliminate human control
3. To eliminate human presence
4. No ultimate goal

Options :

60348920797. 1

60348920798. 2

60348920799. 3

60348920800. 4

Question Number : 35 Question Id : 6034895695 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In the nine stages of the adoption process of mechanization, which one of the following is placed immediately before the stationary power substitution stage?

1. Motive power substitution
2. Draft animal power application
3. Farming system adaptation
4. Plant adaptation

Options :

60348920801. 1

60348920802. 2

60348920803. 3

60348920804. 4

Question Number : 36 Question Id : 6034895696 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A pair of draft animals was used on 1.3 ha farm for two working days at 10 hours working per day. Considering the energy equivalent of 10.1 MJ/h, the energy input by this pair of animals is-

1. 15.53 MJ/ha
2. 155.38 MJ/ha
3. 20.18 MJ/ha
4. 201.8 MJ/ha

Options :

60348920805. 1

60348920806. 2

60348920807. 3

60348920808. 4

Question Number : 37 Question Id : 6034895697 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A suitable indicator to represent the impact in a low-input agricultural system is-

1. Impacts per ha
2. Impacts per kg of product
3. Impacts per cost of inputs
4. Impacts per tonne of emission

Options :

60348920809. 1

60348920810. 2

60348920811. 3

60348920812. 4

Question Number : 38 Question Id : 6034895698 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A 2 ha farm uses 450 g chemical herbicides (10% *a.i.*). Taking the Emission Factor of 23.1 kg CO₂/(kg *a.i.*) for herbicides, the emission of CO₂ in kg CO₂/ha will be-

1. 10.40
2. 1.04
3. 0.52
4. 5.20

Options :

60348920813. 1

60348920814. 2

60348920815. 3

60348920816. 4

Question Number : 39 Question Id : 6034895699 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

For a tillage implement working in a field, its Field Efficiency can be defined as the ratio of-

1. Effective field capacity to Theoretical field capacity
2. Theoretical field capacity to Effective field capacity
3. Material capacity to Throughput capacity
4. Throughput capacity to Material capacity

Options :

60348920817. 1

60348920818. 2

60348920819. 3

60348920820. 4

Question Number : 40 Question Id : 6034895700 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following is not the core principal purpose of mechanization?

1. Decrease in human drudgery
2. Decrease in production losses
3. Decrease in cost of production
4. Decrease in environmental impact

Options :

60348920821. 1

60348920822. 2

60348920823. 3

60348920824. 4

Question Number : 41 Question Id : 6034895701 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The tensiometer can measure the matric potential head up to-

1. 0.20 bar
2. 0.50 bar
3. 0.80 bar
4. 1.00 bar

Options :

60348920825. 1

60348920826. 2

60348920827. 3

60348920828. 4

Question Number : 42 Question Id : 6034895702 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Infiltration is measured by using-

1. USWB class A pan
2. Cylindrical metal rings
3. Rain gauges
4. None of these

Options :

60348920829. 1

60348920830. 2

60348920831. 3

60348920832. 4

Question Number : 43 Question Id : 6034895703 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Irrigation method in which field is divided into small units surrounded by dikes is termed as-

1. Basin irrigation
2. Furrow irrigation
3. Sprinkler irrigation
4. Drip irrigation

Options :

60348920833. 1

60348920834. 2

60348920835. 3

60348920836. 4

Question Number : 44 Question Id : 6034895704 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following is not one of the water balance components of a field plot?

1. Infiltration
2. Evaporation
3. Rainfall
4. Deep percolation

Options :

60348920837. 1

60348920838. 2

60348920839. 3

60348920840. 4

Question Number : 45 Question Id : 6034895705 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If the head over a V notch at the end of the channel is 0.75 m and coefficient of discharge (C_d) is 0.45, the discharge (m^3/s) over a V notch of angle 90° will be-

1. 0.5-0.6 m^3/s
2. 0.4-0.5 m^3/s
3. 0.3-0.4 m^3/s
4. 0.2-0.3 m^3/s

Options :

60348920841. 1

60348920842. 2

60348920843. 3

60348920844. 4

Question Number : 46 Question Id : 6034895706 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In an experiment site, the crop coefficient of the rice crop is 1.2 and the evaporation from a pan is observed to be 6 mm. Assume pan coefficient as 0.7, the crop evapotranspiration, in mm, will be-

1. 6.05
2. 5.04
3. 4.03
4. 2.03

Options :

60348920845. 1

60348920846. 2

60348920847. 3

60348920848. 4

Question Number : 47 Question Id : 6034895707 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A forested watershed of 5 ha has rainfall intensity of 5 cm/h based on 30 years' record. If the runoff coefficient for forest area is 0.1, the peak runoff rate (lps) from this watershed will be-

- 1. 0.06 - 0.07
- 2. 0.69 - 0.70
- 3. 6.90 - 7.00
- 4. 69 - 70

Options :

60348920849. 1

60348920850. 2

60348920851. 3

60348920852. 4

Question Number : 48 Question Id : 6034895708 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In a drip irrigation system, the minimum discharge, the average discharge and the coefficient of variation are 3.89 lph, 4.59 lph, 0.06, respectively. If each plant has two emitters, the emission uniformity will be-

- 1. 30 – 31 %
- 2. 62 – 63 %
- 3. 70 – 75 %
- 4. 80 – 81 %

Options :

60348920853. 1

60348920854. 2

60348920855. 3

60348920856. 4

Question Number : 49 Question Id : 6034895709 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If an agricultural soil contains 47 % pore space, and the moisture content after gravity drainage is 39 % (by volume), the void ratio and drainable porosity (in %) will be-

1. 0.3 and 5 %
2. 0.5 and 15 %
3. 0.7 and 10 %
4. 0.9 and 8 %

Options :

60348920857. 1

60348920858. 2

60348920859. 3

60348920860. 4

Question Number : 50 Question Id : 6034895710 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In a dry area, rainwater is harvested in an existing farm pond for dry season crop cultivation. The volume of water estimated in the pond is 900 m^3 . A low-water demanding crop is planned to be cultivated requiring 30 cm water for irrigation at two water sensitive growth stages. Assuming no other losses of water, the irrigated area with the stored water will be-

1. 0.3 ha
2. 3.0 ha
3. 0.25 ha
4. 2.5 ha

Options :

60348920861. 1

60348920862. 2

60348920863. 3

60348920864. 4

Question Number : 51 Question Id : 6034895711 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The refractive index of the ocean water-

1. Decreases with salinity
2. Increases with salinity
3. Decreases with temperature
4. Increases with temperature

Options :

60348920865. 1

60348920866. 2

60348920867. 3

60348920868. 4

Question Number : 52 Question Id : 6034895712 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In vegetation canopies, SWIR reflectance indicates changes in-

1. Vegetation water content and structure
2. Structure and leaf dry matter
3. Only leaf dry matter
4. None of the above

Options :

60348920869. 1

60348920870. 2

60348920871. 3

60348920872. 4

Question Number : 53 Question Id : 6034895713 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a classification of scattering principle?

1. Rayleigh scattering
2. Mie scattering
3. Faraday scattering
4. Non-selective scattering

Options :

60348920873. 1

60348920874. 2

60348920875. 3

60348920876. 4

Question Number : 54 Question Id : 6034895714 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following scales is recommended for mapping land use and land cover?

1. 1: 25000
2. 1: 50000
3. 1: 250000
4. 1: 25

Options :

60348920877. 1

60348920878. 2

60348920879. 3

60348920880. 4

Question Number : 55 Question Id : 6034895715 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which among the following is the only server-based platform of GIS?

1. STAAD Pro
2. Autodesk Revit
3. Google-maps
4. Arc GIS

Options :

60348920881. 1

60348920882. 2

60348920883. 3

60348920884. 4

Question Number : 56 Question Id : 6034895716 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The products of JASON mission are mainly used for-

1. Rainfall estimation
2. Reservoir height estimation
3. Groundwater Estimation
4. Runoff Estimation

Options :

60348920885. 1

60348920886. 2

60348920887. 3

60348920888. 4

Question Number : 57 Question Id : 6034895717 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following statements is correct?

1. A reduction of nitrogen nutrient in plants, affects leaf colour
2. A reduction of nitrogen nutrient in plants, reduces pigment concentration
3. A reduction of nitrogen nutrient in plants, increase the visible reflectivity
4. All of the above

Options :

60348920889. 1

60348920890. 2

60348920891. 3

60348920892. 4

Question Number : 58 Question Id : 6034895718 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following statements is correct?

1. The refractive index of a medium varies according to the wavelength of the radiation
2. The variation of the refractive index with wave length, is called dispersion
3. The splitting of colours of white light by passing through a prism is caused due to dispersion
4. All of the above

Options :

60348920893. 1

60348920894. 2

60348920895. 3

60348920896. 4

Question Number : 59 Question Id : 6034895719 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Leaf reflectance depends primarily on-

1. The pigments
2. Internal cell structure
3. Equivalent water content
4. All of the above

Options :

60348920897. 1

60348920898. 2

60348920899. 3

60348920900. 4

Question Number : 60 Question Id : 6034895720 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following indicates the correct set of bands operated in LISS- III satellite?

1. Visible ray, near IR
2. Near IR, radio wave
3. Radio wave, near IR
4. Far IR, near IR

Options :

60348920901. 1

60348920902. 2

60348920903. 3

60348920904. 4

Question Number : 61 Question Id : 6034895721 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

An early loss of firmness immediately after pressurization in HPP is called as-

1. Instantaneous pressure softening
2. Baric softening
3. Pressure effect
4. Pressure deformation

Options :

60348920905. 1

60348920906. 2

60348920907. 3

60348920908. 4

Question Number : 62 Question Id : 6034895722 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A semiconductor device which can convert radiation directly into electromotive force is known as-

1. Pyranometer
2. Photovoltaic cell
3. Anemometer
4. Concentrator

Options :

60348920909. 1

60348920910. 2

60348920911. 3

60348920912. 4

Question Number : 63 Question Id : 6034895723 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Minimum temperature and time requirements for milk pasteurization are based on thermal death time of bacteria-

1. *Coxellia burnettii*
2. *C. diphtheriae*
3. *Listeria monocytogenes*
4. *B. cereus*

Options :

60348920913. 1

60348920914. 2

60348920915. 3

60348920916. 4

Question Number : 64 Question Id : 6034895724 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The power of wind depends upon its-

1. Thermal energy
2. Chemical energy
3. Kinetic energy
4. Sound energy

Options :

60348920917. 1

60348920918. 2

60348920919. 3

60348920920. 4

Question Number : 65 Question Id : 6034895725 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Ultra-high temperature (UHT) processing is the continuous-flow sterilization of milk by exposing milk to temperatures above-

1. 300 °C
2. 250 °C
3. 200 °C
4. 100 °C

Options :

60348920921. 1

60348920922. 2

60348920923. 3

60348920924. 4

Question Number : 66 Question Id : 6034895726 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Zeroth law of thermodynamics defines-

1. Enthalpy
2. Temperature
3. Pressure
4. Internal energy

Options :

60348920925. 1

60348920926. 2

60348920927. 3

60348920928. 4

Question Number : 67 Question Id : 6034895727 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In the process of enzyme inactivation by HPP, the Gibbs free energy is related to pressure as-

1. Directly proportional
2. Inversely proportional
3. Not related
4. Inversely squared

Options :

60348920929. 1

60348920930. 2

60348920931. 3

60348920932. 4

Question Number : 68 Question Id : 6034895728 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following will have the least value of thermal conductivity?

1. Copper
2. Aluminum
3. Glass
4. Air

Options :

60348920933. 1

60348920934. 2

60348920935. 3

60348920936. 4

Question Number : 69 Question Id : 6034895729 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Relationship between the absorbed light energy (E_d) and resulting temperature change (ΔT) in pulsed light technology can be expressed as-

[Where, ρ (kg/m^3) and c_p (J/kg) are the density and the specific heat capacity of the material; A is the surface area (m^2), k is thermal conductivity (W/mK)]

$$1. \Delta T = \frac{d}{\rho c_p A E_d}$$

$$2. \Delta T = \frac{\rho E_d}{c_p A d}$$

$$3. \Delta T = \frac{E_d}{\rho C_p A d}$$

$$4. \Delta T = \frac{E_d}{\rho k A d}$$

Options :

60348920937. 1

60348920938. 2

60348920939. 3

60348920940. 4

Question Number : 70 Question Id : 6034895730 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The equilibrium moisture content confirms the end of-

1. Constant rate period
2. Falling rate period
3. Warm up period
4. Initial settling period

Options :

60348920941. 1

60348920942. 2

60348920943. 3

60348920944. 4

Question Number : 71 Question Id : 6034895731 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The decimal reduction time D_{130} and z value for the process is 50 s and 10 °C. The D value for 150 °C will be-

1. 5 s
2. 500 s
3. 0.5 s
4. 10 s

Options :

60348920945. 1

60348920946. 2

60348920947. 3

60348920948. 4

Question Number : 72 Question Id : 6034895732 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The air breakdown voltage required for the cold plasma generation is-

1. 50 kV/mm
2. 5 kV/mm
3. 3 kV/mm
4. 30 kV/mm

Options :

60348920949. 1

60348920950. 2

60348920951. 3

60348920952. 4

Question Number : 73 Question Id : 6034895733 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The exergy efficiency is defined as the ratio of-

1. Exergy inflow to exergy loss
2. Exergy outflow to exergy inflow
3. Exergy loss to energy loss
4. Exergy outflow to energy outflow

Options :

60348920953. 1

60348920954. 2

60348920955. 3

60348920956. 4

Question Number : 74 Question Id : 6034895734 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Milk can be sterilized either at 135 °C for 6 s or at 140 °C for 2 s. With these, the z value of the microorganism will be-

1. 15.42 °C
2. 18.61 °C
3. 10.48 °C
4. 11.52 °C

Options :

60348920957. 1

60348920958. 2

60348920959. 3

60348920960. 4

Question Number : 75 Question Id : 6034895735 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The anti-freezing proteins growth is inhibited after binding with-

1. Proteins
2. Food matrix
3. Ice crystals
4. Freezing agent

Options :

60348920961. 1

60348920962. 2

60348920963. 3

60348920964. 4

Question Number : 76 Question Id : 6034895736 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the statement is true for exergy phenomenon?

1. Exergy destruction takes place due to irreversibility in real process
2. Exergy is conserved in real process
3. Exergy analysis is based on zeroth law of thermodynamics
4. Exergy analysis does not provide any information about quality of energy

Options :

60348920965. 1

60348920966. 2

60348920967. 3

60348920968. 4

Question Number : 77 Question Id : 6034895737 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Mathematically, Lethality (L) can be expressed as-

1. $L = \int 10^{\frac{T-T_R}{z}} dt$

2. $L = \int 10^{\frac{T-T_R}{D}} dt$

3. $L = \int 10^{\frac{z}{T-T_R}} dt$

4. $L = \int 10^{\frac{T-T_R}{F}} dt$

Options :

60348920969. 1

60348920970. 2

60348920971. 3

60348920972. 4

Question Number : 78 Question Id : 6034895738 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The process of transferring heat energy from lower to higher temperature region is known as-

1. Convection
2. Conduction
3. Radiation
4. Refrigeration

Options :

60348920973. 1

60348920974. 2

60348920975. 3

60348920976. 4

Question Number : 79 Question Id : 6034895739 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following is not a part of the solar photovoltaic system?

1. Solar PV panel
2. Flat plate solar collector
3. Battery
4. Inverter

Options :

60348920977. 1

60348920978. 2

60348920979. 3

60348920980. 4

Question Number : 80 Question Id : 6034895740 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The driving force in heat transfer and rate equation are, respectively, explained by-

1. Velocity difference and Newton's law
2. Concentration difference and Ficks's law
3. Temperature difference and Fourier's law
4. Pressure difference and Pascal's law

Options :

60348920981. 1

60348920982. 2

60348920983. 3

60348920984. 4

Question Number : 81 Question Id : 6034895741 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Pair of primers are a must for which one of the following molecular markers?

1. ISSR
2. RAPD
3. RFLP
4. SSR

Options :

60348920985. 1

60348920986. 2

60348920987. 3

60348920988. 4

Question Number : 82 Question Id : 6034895742 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Radioactivity may be used in which one of the following markers?

1. ISSR
2. RAPD
3. RFLP
4. SSR

Options :

60348920989. 1

60348920990. 2

60348920991. 3

60348920992. 4

Question Number : 83 Question Id : 6034895743 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Foreground and background selection is done in-

1. MAS
2. Conventional breeding
3. Vegetative propagation
4. Hybridization

Options :

60348920993. 1

60348920994. 2

60348920995. 3

60348920996. 4

Question Number : 84 Question Id : 6034895744 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Background selection is done for which one of the parent genome recovery?

1. Recurrent parent
2. Non-recurrent parent
3. Recurrent and non-recurrent parent
4. Wild parent

Options :

60348920997. 1

60348920998. 2

60348920999. 3

60348921000. 4

Question Number : 85 Question Id : 6034895745 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following is not true for MAS?

1. Early selection
2. Less initial cost
3. Less labour intensive
4. High reproducibility

Options :

60348921001. 1

60348921002. 2

60348921003. 3

60348921004. 4

Question Number : 86 Question Id : 6034895746 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Hypoxia is associated with stress because of-

1. Drought
2. Cold
3. Salt
4. Lack of oxygen

Options :

60348921005. 1

60348921006. 2

60348921007. 3

60348921008. 4

Question Number : 87 Question Id : 6034895747 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Golden rice is rich in-

1. Protein
2. Carbohydrate
3. β -carotene
4. Protein and Carbohydrate

Options :

60348921009. 1

60348921010. 2

60348921011. 3

60348921012. 4

Question Number : 88 Question Id : 6034895748 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following is part of the Type IV secretory system?

1. Vir-B
2. Vir-A
3. Vir-D
4. Vir-G

Options :

60348921013. 1

60348921014. 2

60348921015. 3

60348921016. 4

Question Number : 89 Question Id : 6034895749 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following is not a molecular marker?

1. SSR
2. Protein/Isozyme
3. SNP
4. RFLP

Options :

60348921017. 1

60348921018. 2

60348921019. 3

60348921020. 4

Question Number : 90 Question Id : 6034895750 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In sodic soil, the exchangeable sodium percentage will be-

1. > 15 %
2. < 15 %
3. < 10 %
4. 10-14 %

Options :

60348921021. 1

60348921022. 2

60348921023. 3

60348921024. 4

Question Number : 91 Question Id : 6034895751 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

During SOS signalling, the protein which first binds with Ca^{2+} is-

1. SOS3
2. SOS2
3. SOS1
4. Kinase

Options :

60348921025. 1

60348921026. 2

60348921027. 3

60348921028. 4

Question Number : 92 Question Id : 6034895752 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following hydrolyzes phospholipids?

1. PA
2. PLD
3. PC
4. Phosphoric acid

Options :

60348921029. 1

60348921030. 2

60348921031. 3

60348921032. 4

Question Number : 93 Question Id : 6034895753 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The full form of ERF transcription factor is-

1. Ethylene Response Factor
2. Early Root Factor
3. Ethylene Root Factor
4. Early Response Factor

Options :

60348921033. 1

60348921034. 2

60348921035. 3

60348921036. 4

Question Number : 94 Question Id : 6034895754 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

SnRK2-mediated signalling under abiotic stress is dependent on the hormone-

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

Options :

60348921037. 1

60348921038. 2

60348921039. 3

60348921040. 4

Question Number : 95 Question Id : 6034895755 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Leucine zipper domain is available in which transcription factor?

1. bHLH
2. bZIP
3. AP2/ERF
4. DREB

Options :

60348921041. 1

60348921042. 2

60348921043. 3

60348921044. 4

Question Number : 96 Question Id : 6034895756 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

NHX1 is localized in which part of the cell-

1. Cell membrane
2. Vacuole
3. Golgi body
4. Endoplasmic reticulum

Options :

60348921045. 1

60348921046. 2

60348921047. 3

60348921048. 4

Question Number : 97 Question Id : 6034895757 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Mutation in the restriction enzyme site is the basis of which molecular marker?

1. SSR
2. ISSR
3. RFLP
4. RAPD

Options :

60348921049. 1

60348921050. 2

60348921051. 3

60348921052. 4

Question Number : 98 Question Id : 6034895758 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which part of T-DNA is a must for DNA transfer from Agrobacterium into plants?

1. Auxin genes
2. Left and right border
3. Cytokinin genes
4. Ori gene

Options :

60348921053. 1

60348921054. 2

60348921055. 3

60348921056. 4

Question Number : 99 Question Id : 6034895759 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The enzyme that is not involved in proline biosynthesis is-

1. Pyrroline-5-carboxylate reductase
2. Pyrroline-5-carboxylate synthetase
3. Proline dehydrogenase
4. Ornithine aminotransferase

Options :

60348921057. 1

60348921058. 2

60348921059. 3

60348921060. 4

Question Number : 100 Question Id : 6034895760 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Transcription factors are bound to a region of our DNA that is called-

1. Gene sequences region
2. RNA sequences region
3. Terminator region
4. Promoter region

Options :

60348921061. 1

60348921062. 2

60348921063. 3

60348921064. 4