National Testing Agency

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Agricultural Statistics

Group Number :	1
Group Id :	190889145
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Break time :	0
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Part A: General Knowledge

Section Id :	190889359
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory

Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889399
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 19088916702 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966701. 1

19088966702. 2

19088966703. 3

19088966704. 4

Question Number : 2 Question Id : 19088916703 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Optical fibre used the concept of which of the following?

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

Options :

19088966705. 1

19088966706. 2

19088966707. 3

19088966708. 4

Question Number : 3 Question Id : 19088916704 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966709. 1

19088966710. 2

19088966711. 3

19088966712. 4

Question Number : 4 Question Id : 19088916705 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966713. 1

19088966714. 2

19088966715. 3

19088966716. 4

Question Number : 5 Question Id : 19088916706 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is the chemical name of vitamin B_2?

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

Options :

19088966717. 1

19088966718. 2

19088966719. 3

19088966720. 4

Question Number : 6 Question Id : 19088916707 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966721. 1

19088966722. 2

19088966723. 3

19088966724. 4

Question Number : 7 Question Id : 19088916708 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The digital computer operates on which of the following principle?

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

Options :

19088966725. 1

19088966726. 2

19088966727. 3

19088966728. 4

Question Number : 8 Question Id : 19088916709 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966729. 1

19088966730. 2

19088966731. 3

19088966732. 4

Question Number : 9 Question Id : 19088916710 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966733. 1

19088966734. 2

19088966735. 3

19088966736. 4

Question Number : 10 Question Id : 19088916711 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966737. 1

19088966738. 2

19088966739. 3

19088966740. 4

Question Number : 11 Question Id : 19088916712 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966741. 1

19088966742. 2

19088966743. 3

19088966744. 4

Question Number : 12 Question Id : 19088916713 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966745. 1

19088966746. 2

19088966747. 3

19088966748. 4

Question Number : 13 Question Id : 19088916714 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966749. 1

19088966750. 2

19088966751. 3

19088966752. 4

Question Number : 14 Question Id : 19088916715 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966753. 1

19088966754. 2

19088966755. 3

19088966756. 4

Question Number : 15 Question Id : 19088916716 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966757. 1

19088966758. 2

19088966759. 3

19088966760. 4

Question Number : 16 Question Id : 19088916717 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966761. 1

19088966762. 2

19088966763. 3

19088966764. 4

Question Number : 17 Question Id : 19088916718 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966765. 1

19088966766. 2

19088966767. 3

19088966768. 4

Question Number : 18 Question Id : 19088916719 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is the focus of the participatory plant breeding program?

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

Options :

19088966769. 1

19088966770. 2

19088966771. 3

19088966772. 4

Question Number : 19 Question Id : 19088916720 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966773. 1

19088966774. 2

19088966775. 3

19088966776. 4

Question Number : 20 Question Id : 19088916721 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

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

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

Options :

19088966777. 1

19088966778. 2

19088966779. 3

19088966780. 4

Part B Core : Agricultural Statistics

Section Id :	190889360
Section Number :	2
Section type :	Online

Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889400
Question Shuffling Allowed :	Yes

Question Number : 21 Question Id : 19088916722 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Two unbiased dice are rolled once. The probability that the difference in digits on their upper surface is zero is

1. 1/3
2. 1/6
3. 5/6
4. 1/36

Options :

19088966781. 1

19088966782. 2

19088966783. 3

19088966784. 4

Question Number : 22 Question Id : 19088916723 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Two pure lines of maize have mean cob lengths of 24 and 8 cm respectively. The polygenes involved in this trait exhibit additive gene action. Crossing these two lines will produce a progeny with mean cob length of

1. 8 cm
2. 16 cm
3. 24 cm
4. 32 cm

Options :

19088966785. 1

19088966786. 2

19088966787. 3

19088966788. 4

Question Number : 23 Question Id : 19088916724 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Additive genetic variance can be estimated by

A. Covariance between parents and offspring

B. Covariance among half sibs

Select the ***most appropriate*** option from the options given below:

1. A only
2. B only
3. Either A or B
4. Neither A nor B

Options :

19088966789. 1

19088966790. 2

19088966791. 3

19088966792. 4

Question Number : 24 Question Id : 19088916725 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Suppose, about 20 percent of people do not recognize the bitter taste of phenyl-thio-carbamate in a population. Inability to taste it is due to a single autosomal recessive gene. What is the frequency of the non-tasting gene, assuming the population to be in Hardy-Weinberg equilibrium?

1. 0.04
2. 0.16
3. 0.20
4. 0.45

Options :

19088966793. 1

19088966794. 2

19088966795. 3

19088966796. 4

Question Number : 25 Question Id : 19088916726 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If X and Y are independent random variables with Var(X) = 2, Var(Y) = 5, then Var(3X-Y) is

1. 1
2. 7
3. 11
4. 23

Options :

19088966797. 1

19088966798. 2

19088966799. 3

19088966800. 4

Question Number : 26 Question Id : 19088916727 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If X and Y are two independent Poisson variates, then the conditional distribution of X given X+Y will be

1. Poisson
2. Negative Binomial
3. Binomial
4. Hypergeometric

Options :

19088966801. 1

19088966802. 2

19088966803. 3

19088966804. 4

Question Number : 27 Question Id : 19088916728 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Ten soldiers visit a rifle range for two consecutive weeks. Their scores are $(a_1, a_2, \ldots, a_{10})$ and $(b_1, b_2, \ldots, b_{10})$. The t-statistic for judging whether there is a significant difference in their performance should have t-distribution with degrees of freedom

1. 8
2. 9
3. 18
4. 19

Options :

19088966805. 1

19088966806. 2

19088966807. 3

19088966808. 4

Question Number : 28 Question Id : 19088916729 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If T_n is a sequence of estimates, then a sufficient condition for T_n to be consistent for θ is

1. $E(T_n) \to \theta$
2. $Var(T_n) \to 0$
3. non-existent
4. $E(T_n) \to \theta$ and $Var(T_n) \to 0$

Options :

19088966809. 1

19088966810. 2

19088966811. 3

19088966812. 4

Question Number : 29 Question Id : 19088916730 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

For testing a simple hypothesis against a simple alternative, the Neyman-Pearson lemma provides a technique of getting

1. Least powerful test
2. most powerful test
3. uniformly most powerful test
4. uniformly most powerful unbiased test

Options :

19088966813. 1

19088966814. 2

19088966815. 3

19088966816. 4

Question Number : 30 Question Id : 19088916731 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The large sample efficiency of the median relative to the mean of a normal population is

1. $\frac{1}{\pi}$
2. $\frac{2}{\pi}$
3. $\frac{\pi}{2}$
4. π

Options :

19088966817. 1

19088966818. 2

19088966819. 3

19088966820. 4

Question Number : 31 Question Id : 19088916732 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The mean and variance of a *t*-distribution are 0 and 5/3 respectively. The degrees of freedom of the distribution is

1. 2
2. 3
3. 4
4. 5

Options :

19088966821. 1

19088966822. 2

19088966823. 3

19088966824. 4

Question Number : 32 Question Id : 19088916733 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which one of the following does not occur for a Census (complete enumeration)?

1. Non-sampling error only
2. Sampling error only
3. Both sampling and non-sampling errors
4. Neither sampling nor non-sampling errors.

Options :

19088966825. 1

19088966826. 2

19088966827. 3

19088966828. 4

Question Number : 33 Question Id : 19088916734 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If a sample of size 6 is to be drawn from a population of size 120 in systematic sampling, then the sampling interval will be

1. 6
2. 12
3. 20
4. 114

Options :

19088966829. 1

19088966830. 2

19088966831. 3

19088966832. 4

Question Number : 34 Question Id : 19088916735 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A sample of size $n = 12$ is chosen using a simple random sampling procedure with replacement from a population of size N = 50. The population variance is estimated as 96. An estimate of the standard error of the sample mean is

1. $\sqrt{8}$
2. $\sqrt{38} \times \frac{2}{5}$
3. 8
4. $4 \times \sqrt{6}$

Options :

19088966833. 1

19088966834. 2

19088966835. 3

19088966836. 4

Question Number : 35 Question Id : 19088916736 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If we use a Latin square design to study the effects of m fertilizers on the yield of a certain variety of wheat, then the number of replications of each treatment and the number of plots required respectively are (where n is an arbitrary number)

1. n and m^2
2. m and n^2
3. m and m^2
4. n and n^2

Options :

19088966837. 1

19088966838. 2

19088966839. 3

19088966840. 4

Question Number : 36 Question Id : 19088916737 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In a balanced incomplete block design, $v=15$, $b=35$, $r=7$, $\lambda=1$, the block size is

1. 3
2. 4
3. 5
4. 7

Options :

19088966841. 1

19088966842. 2

19088966843. 3

19088966844. 4

Question Number : 37 Question Id : 19088916738 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If two levels of main plot treatment are increased, then the degrees of freedom for main plot error in a split-plot design with three replications will be increased by

1. 3
2. 4
3. 5
4. 10

Options :

19088966845. 1

19088966846. 2

19088966847. 3

19088966848. 4

Question Number : 38 Question Id : 19088916739 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If $8x-10y+66=0$ and $40x-18y-214=0$ are the two regression lines; then the coefficient of correlation between x and y would be

1. 3/5
2. 9/25
3. –3/5
4. –9/25

Options :

19088966849. 1

19088966850. 2

19088966851. 3

19088966852. 4

Question Number : 39 Question Id : 19088916740 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Conceptualization and rationalization of database can be done by

1. Data Manipulation Language (DML)
2. Query
3. Relational Schema
4. Data Definition Language (DDL)

Options :

19088966853. 1

19088966854. 2

19088966855. 3

19088966856. 4

Question Number : 40 Question Id : 19088916741 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Following are the methods for reconstructing phylogenetic tree except

1. Maximum parsimony
2. Maximum likelihood
3. Neighbour Joining
4. Neural Network

Options :

19088966857. 1

19088966858. 2

19088966859. 3

19088966860. 4

Question Number : 41 Question Id : 19088916742 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is a high throughout method of gene expression measurement?

1. Northern Blotting
2. Microarray
3. Quantitative PCR
4. Southern Blotting

Options :

19088966861. 1

19088966862. 2

19088966863. 3

19088966864. 4

Question Number : 42 Question Id : 19088916743 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What was the technique used by Watson and Crick to deduce the structure of DNA?

1. X-ray diffraction
2. NMR
3. Southern Hybridization
4. PCR

Options :

19088966865. 1

19088966866. 2

19088966867. 3

19088966868. 4

Question Number : 43 Question Id : 19088916744 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which is the chemical group that lies at the 5' end of DNA?

1. Hydroxyl group
2. Methyl group
3. Phosphate
4. Benzyl group

Options :

19088966869. 1

19088966870. 2

19088966871. 3

19088966872. 4

Question Number : 44 Question Id : 19088916745 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is the strand of DNA that has the same sequence as RNA?

1. Coding strand
2. Complementary strand
3. Template
4. Antisense strand

Options :

19088966873. 1

19088966874. 2

19088966875. 3

19088966876. 4

Question Number : 45 Question Id : 19088916746 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

BLOSUM matrices were designed to find

1. Expressed region of DNA
2. Promoter region of DNA
3. Conserved Region of Proteins
4. Stable Region of RNA

Options :

19088966877. 1

19088966878. 2

19088966879. 3

19088966880. 4

Question Number : 46 Question Id : 19088916747 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Distant members of a protein sequence family can be found by

1. BLASTN
2. PSIBLAST
3. BLASTP
4. BLASTX

Options :

19088966881. 1

19088966882. 2

19088966883. 3

19088966884. 4

Question Number : 47 Question Id : 19088916748 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is a protein 3D structure database?

1. Prosite
2. PDB
3. Swiss-Prot
4. RefSeq

Options :

19088966885. 1

19088966886. 2

19088966887. 3

19088966888. 4

Question Number : 48 Question Id : 19088916749 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is/are true regarding the global alignment algorithm?

A. It compares sequences and gives the best overall alignment.

B. It is better at finding motifs, especially for sequences that are different overall.

C. It will return only the best matching segment for a given pair of sequences.

Select the most appropriate answer from the following:

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

Options :

19088966889. 1

19088966890. 2

19088966891. 3

19088966892. 4

Question Number : 49 Question Id : 19088916750 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Paralogues are defined as

1. Homologous sequences in different species that share an ancestral gene
2. Homologous sequences that share little amino acid identity but share great structural similarity
3. Homologous sequences in the same species that arose through gene duplication
4. Homologous sequences in different species which have similar and often redundant functions

Options :

19088966893. 1

19088966894. 2

19088966895. 3

19088966896. 4

Question Number : 50 Question Id : 19088916751 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider the two statements given below:

A. The Levenshtein distance, defined between two strings of not necessarily equal length, is the minimal number of edit operations required to change one string into the other.
B. The Hamming distance, defined between two strings of equal length, is the number of positions with matching characters.

Choose the correct answer from the options given below :

1. Both A and B
2. Only A
3. Only B
4. Neither A nor B

Options :

19088966897. 1

19088966898. 2

19088966899. 3

19088966900. 4

Question Number : 51 Question Id : 19088916752 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Arrange the basic steps of comparative modeling in the correct order:

A. The target is aligned with the template
B. Iteration to correct errors (if any)
C. A model is built
D. Template selection and fold assignment are performed
E. The model is evaluated

Choose the correct answer (correct order of steps) from the options given below :

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

Options :

19088966901. 1

19088966902. 2

19088966903. 3

19088966904. 4

Question Number : 52 Question Id : 19088916753 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following method/ tool is used to validate the quality of protein structures?

1. WHAT IF
2. PROVE
3. PROSA
4. All of the above

Options :

19088966905. 1

19088966906. 2

19088966907. 3

19088966908. 4

Question Number : 53 Question Id : 19088916754 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In object-oriented programming which of the following provides an important extension to the idea of reusability?

1. Encapsulation
2. polymorphism
3. Inheritance
4. Abstraction

Options :

19088966909. 1

19088966910. 2

19088966911. 3

19088966912. 4

Question Number : 54 Question Id : 19088916755 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Match the special character classes (List I) in Perl with the content (List II):

List I	List II
Special characters class	Content
A. \w	I. Non whitespace characters
B. \W	II. Alphanumeric characters and_
C. \s	III. Neither alphanumeric characters nor_
D. \S	IV. Numeric digit
E. \d	V. Whitespace characters

Choose the correct answer from the options given below :

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

Options :

19088966913. 1

19088966914. 2

19088966915. 3

19088966916. 4

Question Number : 55 Question Id : 19088916756 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What is correct about database consistency?

Statement I : Database consistency is the property that every transaction sees a consistent database instance.

Statement II : Database consistency follows from transaction atomicity, isolation, and transaction consistency.

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 :

19088966917. 1

19088966918. 2

19088966919. 3

19088966920. 4

Question Number : 56 Question Id : 19088916757 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In case of transactions in DBMS, it can be incomplete for the following reasons.

A. A transaction can be aborted, or terminated unsuccessfully, by the DBMS because some anomaly arises during execution.
B. If a transaction is aborted by the DBMS for some internal reason, it is automatically restarted and executed anew.
C. The system may crash because of interruption on power supply while one or more transactions are in progress.
D. A transaction may encounter an unexpected situation, may be due to inability to access some disk and decide to terminate itself.
E. The transaction may be aborted due to simultaneous access to the record writing and reading.

Choose the correct answer from the options given below :

1. Reasons A, B and D are correct.
2. All given reasons are correct.
3. Reasons A and B are correct.
4. None of the reasons is correct.

Options :

19088966921. 1

19088966922. 2

19088966923. 3

19088966924. 4

Question Number : 57 Question Id : 19088916758 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I: In most of the ambiguous context free grammars. it is possible to redesign an ambiguous grammar to make it an unambiguous grammar for the same language.

Statement II : An ambiguous grammars with certain tricks applied sometimes lead to more efficient parsers.

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 :

19088966925. 1

19088966926. 2

19088966927. 3

19088966928. 4

Question Number : 58 Question Id : 19088916759 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Who introduced the worlds first laptop computer in the market and when?

1. Hewlett-Packard in 1980
2. Compaq in 1984
3. Epson in 1981
4. Intel in 1979

Options :

19088966929. 1

19088966930. 2

19088966931. 3

19088966932. 4

Question Number : 59 Question Id : 19088916760 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: Types of ROM are: Masked ROM, PROM, EPROM and EEPROM.

Statement II: There are two types of RAMs: Static RAM, Dynamic RAM.

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 :

19088966933. 1

19088966934. 2

19088966935. 3

19088966936. 4

Question Number : 60 Question Id : 19088916761 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which HTML attribute can be used for defining inline styles?

1. style
2. styles
3. class
4. font

Options :

19088966937. 1

19088966938. 2

19088966939. 3

19088966940. 4

Question Number : 61 Question Id : 19088916762 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which is the standard tool for designing Object-Oriented System at present?

1. Booch Modeling Language
2. Object Modeling Language
3. Unified Modeling Language
4. Class, responsibilities and collaborators language

Options :

19088966941. 1

19088966942. 2

19088966943. 3

19088966944. 4

Question Number : 62 Question Id : 19088916763 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

There are two generic approaches for software designing - Top-down Design and Bottom-up Design. Read the following statements.

Statement I: Top-down design model starts with most specific and basic components. It proceeds with composing higher level of components by using basic or lower level components. It keeps creating higher level components until the desired system is not evolved as one single component.

Statement II: Bottom-up design takes the whole software system as one entity and then decomposes it to achieve more than one sub-system or component based on some characteristics.
In light of the above statements, choose the **correct** answer from options given below

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

Options :

19088966945. 1

19088966946. 2

19088966947. 3

19088966948. 4

Question Number : 63 Question Id : 19088916764 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A diagrammatic representation that illustrates the sequence of operations to solve a particular task in computer programming is called

1. Program
2. Algorithm
3. Flowchart
4. Codes

Options :

19088966949. 1

19088966950. 2

19088966951. 3

19088966952. 4

Question Number : 64 Question Id : 19088916765 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

For... loop is which type of statement?

1. Conditional statement
2. Input
3. Repetitive
4. Output

Options :

19088966953. 1

19088966954. 2

19088966955. 3

19088966956. 4

Question Number : 65 Question Id : 19088916766 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Choose the correct option regarding searching a key in ordered list

1. Sequential search is faster than Binary search.
2. Sequential search is slower than Binary search.
3. Both sequential search and binary search have equal performance.
4. None of the above

Options :

19088966957. 1

19088966958. 2

19088966959. 3

19088966960. 4

Question Number : 66 Question Id : 19088916767 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following are two popular computer networks?

1. Local Network and Wide Area Network
2. Local Area Network and Wide Area Network
3. Wide Area Network and Internet Network
4. None of the above

Options :

19088966961. 1

19088966962. 2

19088966963. 3

19088966964. 4

Question Number : 67 Question Id : 19088916768 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

What are the two main functions of operating system?

1. User/computer interface and Resource Management
2. Processes Management and File Management
3. Printing and Reading files
4. None of the above

Options :

19088966965. 1

19088966966. 2

19088966967. 3

19088966968. 4

Question Number : 68 Question Id : 19088916769 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following statements are true about "Variable" in any computer programming language?

A. It is an alpha-numeric name that represents value of data
B. Name of memory address in which data/value is stored
C. Name of user defined function
D. Keyword in C programming langauge

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

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

Options :

19088966969. 1

19088966970. 2

19088966971. 3

19088966972. 4

Question Number : 69 Question Id : 19088916770 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following command is used to rename a file in LINUX?

1. ren old_name new_name
2. cp old_name new name
3. mv old name new_name
4. rm old_name new_name

Options :

19088966973. 1

19088966974. 2

19088966975. 3

19088966976. 4

Question Number : 70 Question Id : 19088916771 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Bus topology, Ring topology, star topology and Tree topology are major network topologies used in which of the following network.

1. Wide Area Network
2. Metropolitan Area Network
3. Internet Public Network
4. Local Area Network

Options :

19088966977. 1

19088966978. 2

19088966979. 3

19088966980. 4

Part C : Agricultural Statistics

Section Id :	190889361
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	200
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	190889401
Question Shuffling Allowed :	Yes

Question Number : 71 Question Id : 19088916772 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The arithmetic mean of nine consecutive numbers is 30. The largest of these numbers would be

1. 26
2. 32
3. 33
4. 34

Options :

19088966981. 1

19088966982. 2

19088966983. 3

19088966984. 4

Question Number : 72 Question Id : 19088916773 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In a sample of 100 people, 54 are rice eaters and the rest are wheat eaters. The calculated value of the test statistic for testing whether rice and wheat are equally popular is

1. 2.53
2. 0.80
3. 1.96
4. 2.00

Options :

19088966985. 1

19088966986. 2

19088966987. 3

19088966988. 4

Question Number : 73 Question Id : 19088916774 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The odds against a farm manager A settling a wage dispute with the workers are 8:6 and odds in favour of farm manager B settling the same dispute are 14:16. Then the probability that neither settles the dispute, if they both try independently of each other is

1. 12/49
2. 56/225
3. 32/105
4. 3/15

Options :

19088966989. 1

19088966990. 2

19088966991. 3

19088966992. 4

Question Number : 74 Question Id : 19088916775 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given $P(-1 < Z < 1) = 0.6826$; $P(-2 < Z < 2) = 0.9544$; $P(-3 < Z < 3) = 0.9973$ where Z is standard normal variate, match the following:

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

List I	List II
A. $P(-3 < Z < -1)$	I. 0.00135
B. $P(Z < -3)$	II. 0.15735
C. $P(-2 < Z < 1)$	III. 0.81850
D. $P(Z > +3)$	IV. 0
E. $P(Z = 0)$	V. 0.99865

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

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

Options :

19088966993. 1

19088966994. 2

19088966995. 3

19088966996. 4

Question Number : 75 Question Id : 19088916776 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Let X be distributed with pdf f(x) =1 if $0 < x < 1$, and 0 otherwise. Then a lower bound for

$P\left\{\left|X - \frac{1}{2}\right| \leq \frac{1}{\sqrt{3}}\right\}$ is

1. 0.50
2. 0.25
3. 0
4. 0.75

Options :

19088966997. 1

19088966998. 2

19088966999. 3

19088967000. 4

Question Number : 76 Question Id : 19088916777 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In an output of a statistical software, the p-value (exact probability value) for a particular test statistic while testing a specific hypothesis is written as 0.042. Hence the null hypothesis would be rejected

1. at both 1% and 5% levels of significance
2. at 1% but not at 5% level of significance
3. at 5% but not at 1% level of significance
4. neither at 1% nor at 5% level of significance

Options :

19088967001. 1

19088967002. 2

19088967003. 3

19088967004. 4

Question Number : 77 Question Id : 19088916778 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If X and Y are independent Gamma variates with parameters μ and ν respectively, then the Jacobian (without taking modulus) for finding the joint distribution of U = X+Y and Z = X/(X+Y) is

1. U
2. –U+2ZU
3. -U
4. U (1-2Z)

Options :

19088967005. 1

19088967006. 2

19088967007. 3

19088967008. 4

Question Number : 78 Question Id : 19088916779 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following statements is correct about t-test of significance?

1. Significance values of t at α level of significance for a two tailed test can be obtained from those of single tailed test by looking the values at 2α level of significance.
2. Significance values of t at 2α level of significance for a single tailed test can be obtained from those of two-tailed test by looking the values at (α/4) level of significance.
3. Significance values of t at α level of significance for a single tailed test can be obtained from those of two-tailed test by looking the values at 2α level of significance.
4. Significance values of t at 2α level of significance for a two tailed test can be obtained from those of single tailed test by looking the values at (α/2) level of significance.

Options :

19088967009. 1

19088967010. 2

19088967011. 3

19088967012. 4

Question Number : 79 Question Id : 19088916780 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following statements is NOT correct?

1. Chi-square test for goodness of fit depends only on the set of observed and expected frequencies and on the degrees of freedom and does not make any assumptions regarding the parent population from which the observations are taken and hence the test can be termed as non-parametric.
2. For Chi-square test for independence of attributes, the sample observations need not be independent as its very purpose is to test whether groups of observations at various levels of the attributes under consideration for their dependence or otherwise.
3. In case of Chi-square test for independence of attributes, no theoretical cell frequency should be less than five and if so, pooling is done with the preceding and succeeding frequencies and the degrees of freedom of the test statistic is adjusted accordingly.
4. In case any of the theoretical cell frequencies is less than five, the use of Yates' correction for a 2x2 contingency table will make little difference in the value of Chi-square if the total frequency of the given data is large, but if the total frequency is small, such a correction will overstate the probability and hence it is recommended that the correction is done even if no theoretical cell frequency is less than five.

Options :

19088967013. 1

19088967014. 2

19088967015. 3

19088967016. 4

Question Number : 80 Question Id : 19088916781 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Let the joint distribution of random variables X and Y be bivariate normal with parameters: μ_X = 3, μ_Y = 1, σ_X^2 = 16, σ_Y^2 =25 and ρ_{XY}= 0.6. Then the conditional distribution of Y given X=7 will be following the univariate normal distribution

1. N (3, 25)
2. N (4, 16)
3. N (3, 16)
4. N (4, 25)

Options :

19088967017. 1

19088967018. 2

19088967019. 3

19088967020. 4

Question Number : 81 Question Id : 19088916782 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Considering the joint pdf of two random variables X and Y,

$$f(x,y) = \begin{cases} 2, 0 < x < 1, 0 < y < x \\ 0, otherwise \end{cases}$$

Which of the following statements are correct?

A. The marginal density function of X is

$$f(x) = \begin{cases} 2x, 0 < x < 1 \\ 0, otherwise \end{cases}$$

B. The conditional density function of X given y is

$$f(x\,|y) = \begin{cases} \frac{1}{(1-y)}, 0 < y < 1 \\ 0, otherwise \end{cases}$$

C. X and Y are independent

D. The conditional density function of Y given x is

$$f(y\,|x) = \begin{cases} \frac{1}{2x}, 0 < x < 1 \\ 0, otherwise \end{cases}$$

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

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

Options :

19088967021. 1

19088967022. 2

19088967023. 3

19088967024. 4

Question Number : 82 Question Id : 19088916783 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider the following data:

X: 68 64 75 50 64 80 75 40 55 64
Y: 62 58 68 45 81 60 68 48 50 70

The sum of squares of the values of the differences between the respective ranks of X and Y corresponding to the (X, Y) pairs was computed as 72 by considering repeated ranks in case of ties. What is the value of the rank correlation coefficient between X and Y?

1. 0.554
2. 0.564
3. 0.545
4. 0.540

Options :

19088967025. 1

19088967026. 2

19088967027. 3

19088967028. 4

Question Number : 83 Question Id : 19088916784 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Let $\mathbf{X} = \begin{pmatrix} X_1 \\ X_2 \\ X_3 \end{pmatrix}$ be distributed as $N_3(\boldsymbol{\mu}, \boldsymbol{\Sigma})$ with mean $\boldsymbol{\mu} = \begin{pmatrix} 1 \\ -1 \\ 2 \end{pmatrix}$ and variance covariance matrix

$\boldsymbol{\Sigma} = \begin{pmatrix} 4 & 0 & -1 \\ 0 & 5 & 0 \\ -1 & 0 & 2 \end{pmatrix}$. Which of the following random variables are independent?

A. X_1 and $(X_1 + 3X_2 - 2X_3)$

B. X_1 and X_2

C. X_2 and X_3

D. (X_1, X_3) and X_2

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

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

Options :

19088967029. 1

19088967030. 2

19088967031. 3

19088967032. 4

Question Number : 84 Question Id : 19088916785 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Suppose a coin was tossed 20 times. Let two runs occur with 10 number of heads and 10 number of tails in the 20 tosses. Considering runs test, given the critical values (tabulated values under null hypothesis) of number of runs as (6 and 16) at 5% level of significance corresponding to these calculated values 10 and 10, the null hypothesis that the sample sequence is random should

1. not be rejected, as the sample with 10 heads and 10 tails would contain between 7 and 15 runs 95% of the time as any observed run of (6 or less) or of (16 or more) is not in the regions of rejection at 5% level of significance
2. be rejected, as the sample with 10 heads and 10 tails would contain between 7 and 15 runs 95% of the time as any observed run of (6 or less) or of (16 or more) is in the regions of rejection at 5% level of significance
3. not be rejected, as the sample with 10 heads and 10 tails would contain between 6 and 16 runs 95% of the time as any observed run of (5 or less) or of (17 or more) is not in the regions of rejection at 5% level of significance
4. be rejected, as the sample with 10 heads and 10 tails should contain between 6 and 16 runs 95% of the time as any observed run of (5 or less) or of (17 or more) is not in the regions of rejection at 5% level of significance

Options :

19088967033. 1

19088967034. 2

19088967035. 3

19088967036. 4

Question Number : 85 Question Id : 19088916786 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

For a Poisson distribution with parameter λ, to test H_0: $\lambda = 2$ against H_1: $\lambda = 1$ based on a sample $x_1, x_2, \ldots, x_n$ of size n, considering k as a constant, $\bar{x}$ as the sample mean of these n observations, the Best Critical Region (BCR) of the test (where the logarithms is to the base e) is

1. $\bar{x} \leq \frac{n + \log k}{n \log 2}$
2. $\bar{x} \leq \frac{\log k}{n \log 2}$
3. $\bar{x} \leq \frac{1 + \log k}{\log 2}$
4. $\bar{x} \leq \frac{k}{n \log 2}$

Options :

19088967037. 1

19088967038. 2

19088967039. 3

19088967040. 4

Question Number : 86 Question Id : 19088916787 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A manufacturer produces two types of agro-based products A and B. Each product-A requires 4 hours of grinding and 2 hours of polishing whereas each product-B requires 2 hours of grinding and 5 hours of polishing. The manufacturer has 2 grinders and 3 polishers. Each grinder works for 40 hours a week and each polisher works for 60 hours a week. Profit on product-A is Rs. 3.00 and on product-B is Rs. 4.00. Whatever is produced in a week is sold in the market.

Let x_1 be the number of product-A and x_2 the number of product-B. Then the graphical solution to the linear programming problem to allocate his production capacity to the two types of products in order to maximise the profit in a week is given by

1. 270.0
2. 144.5
3. 147.5
4. 115.0

Options :

19088967041. 1

19088967042. 2

19088967043. 3

19088967044. 4

Question Number : 87 Question Id : 19088916788 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider simplex method to solve the following LPP:

Maximize $z = 4x_1 + 10x_2$

subject to

$2x_1 + x_2 \leq 50$

$2x_1 + 5x_2 \leq 100$

$2x_1 + 3x_2 \leq 90$

$x_1, x_2 \geq 0$

Then, in the initial simplex table, the value of the leading element for the first iteration is

1. 1
2. 2
3. 4
4. 5

Options :

19088967045. 1

19088967046. 2

19088967047. 3

19088967048. 4

Question Number : 88 Question Id : 19088916789 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider a simple linear regression model $y_i = \alpha + \beta x_i + u_i (i=1, 2, \ldots, 5)$ where y and x are variables and α and β are parameters with u being the error term. Given the values of $\sum x_i, \sum y_i, \sum x_i y_i, \sum x_i^2$ as 20, 40, 230, 120 respectively, suppose the estimates of α and β are then obtained by minimizing the error sum of squares using ordinary least squares method. Then the estimated values of α and β are respectively

1. 1.00 and 1.75
2. 1.71 and 1.00
3. 1.75 and 1.00
4. 1.00 and 1.71

Options :

19088967049. 1

19088967050. 2

19088967051. 3

19088967052. 4

Question Number : 89 Question Id : 19088916790 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Considering the following ANOVA table, the values of estimate of error variance, coefficient of determination R^2 and adjusted R^2 are respectively given by

Source	Degrees of Freedom	Sum of Squares
Regression	3	210
Residual	6	60
Total	9	270

1. 10, 80% and 78.42%
2. 60, 100% and 71.42%
3. 09, 77.22% and 76.77%
4. 10, 77.77% and 66.67%

Options :

19088967053. 1

19088967054. 2

19088967055. 3

19088967056. 4

Question Number : 90 Question Id : 19088916791 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Consider a simple linear regression model $y_i = \alpha + \beta x_i + u_i$ (i=1, 2, …, n) where y and x are variables and α and β are unknown parameters (regression coefficients) with u being the error term and n as number of observations. Which of the following statements are true?

A. If u_i are assumed to be normally distributed, the estimates of regression coefficients obtained by both maximum likelihood and ordinary least squares methods will be identical.

B. The method of ordinary least squares does not need any assumption about the distributional property of u_i for estimating the unknown parameters α and β.

C. The assumption that u_i follow normal distribution is not necessary for the purpose of testing of individual regression coefficients.

D. When all the assumptions of the regression model hold good, the method of ordinary least squares provide estimates that are BLUE i.e. Best Linear Unbiased Estimators hence they are efficient.

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

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

Options :

19088967057. 1

19088967058. 2

19088967059. 3

19088967060. 4

Question Number : 91 Question Id : 19088916792 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Let $X_1, X_2, ..., X_n$ be n sample values independently drawn from a population following Poisson distribution with parameter λ. A maximum likelihood estimator of λ is

1. $\sum_{i=1}^{n} X_i$
2. $n\sum_{i=1}^{n} X_i$
3. $\frac{\sum_{i=1}^{n} X_i}{n}$
4. $\frac{\sum_{i=1}^{n} X_i}{n-1}$

Options :

19088967061. 1

19088967062. 2

19088967063. 3

19088967064. 4

Question Number : 92 Question Id : 19088916793 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If $x \geq 1$ is the critical region for testing $\theta = 2$ against the alternative $\theta = 1$, on the basis of a single observation from the population with $f(x, \theta) = \theta e^{-\theta x}$ $0 < x < \infty$. Then the probability of Type I error is

1. e^{-2}
2. e^{-1}
3. $2e^{-2}$
4. $\frac{1}{2}e^{-1}$

Options :

19088967065. 1

19088967066. 2

19088967067. 3

19088967068. 4

Question Number : 93 Question Id : 19088916794 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Suppose $\boldsymbol{X_i} \sim N_2(\boldsymbol{\mu_i},\ \boldsymbol{\Sigma})$

where $\boldsymbol{\mu_1} = (0.5, 0.5)'$ and

$\boldsymbol{\mu_2} = (0, 1)'$ and

$\boldsymbol{\Sigma} = \begin{pmatrix} 0.3 & 0.2 \\ 0.2 & 0.3 \end{pmatrix}$

Then the Mahalanobis distance between the two populations is

1. 0.16
2. 0.71
3. 3.20
4. 5.00

Options :

19088967069. 1

19088967070. 2

19088967071. 3

19088967072. 4

Question Number : 94 Question Id : 19088916795 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In Sample survey, ratio estimator is a best linear unbiased estimator if (given y as variable under study and x is auxiliary variable)

A – The relation between y and x is a straight line through the origin.

B – The variance of y about regression line is proportional to x.

Select the ***most appropriate*** answer from the options given below

1. Only A holds true
2. Only B holds true
3. Both A and B hold true
4. Either A or B hold true

Options :

19088967073. 1

19088967074. 2

19088967075. 3

19088967076. 4

Question Number : 95 Question Id : 19088916796 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: Diallel crosses are the crosses produced by involving lines in all possible combinations

Statement II: Diallel analysis helps in getting information on the nature and amount of genetic parameters

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

1. Only the Statement I is correct
2. Only the Statement II is correct
3. Both Statement I and Statement II are correct
4. Neither Statement I nor Statement II is correct

Options :

19088967077. 1

19088967078. 2

19088967079. 3

19088967080. 4

Question Number : 96 Question Id : 19088916797 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

An equi-replicated block design is

A. Variance balanced

B. Efficiency balanced

C. Mean balanced

Select the ***most appropriate*** answer from the options given below.

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

Options :

19088967081. 1

19088967082. 2

19088967083. 3

19088967084. 4

Question Number : 97 Question Id : 19088916798 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Recombinant Inbred Lines are developed by

1. Repeated selfing
2. Repeated backcrossing
3. Chromosome doubling
4. Haploid culture

Options :

19088967085. 1

19088967086. 2

19088967087. 3

19088967088. 4

Question Number : 98 Question Id : 19088916799 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A simple random sample of size 3 is drawn from a population of size N with replacement. Then the probability that the sample contains two different units is

1. $3\,(N-1)/N^2$
2. $1/N^2$
3. $(N-1)\,(N-2)/N^2$
4. $2/N^2$

Options :

19088967089. 1

19088967090. 2

19088967091. 3

19088967092. 4

Question Number : 99 Question Id : 19088916800 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Read the following statements carefully

A. Narrow sense heritability is the ratio of the additive genetic variance and phenotypic variance

B. Broad sense heritability is the ratio of the genetic variance and phenotypic variance

C. Narrow sense heritability is the ratio of the additive genetic variance and environmental variance

D. Broad sense heritability is the ratio of the additive genetic variance and environmental variance

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

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

Options :

19088967093. 1

19088967094. 2

19088967095. 3

19088967096. 4

Question Number : 100 Question Id : 19088916801 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Pearsonian type VI curve is one in which the corresponding differential equation has

1. Both the roots are real and are of same sign
2. $b_1^2 > 4b_0b_2$
3. $b_1^2 < 4b_0b_2$
4. Both the roots are real and with the same sign and $b_1^2 > 4b_0b_2$

Options :

19088967097. 1

19088967098. 2

19088967099. 3

19088967100. 4

Question Number : 101 Question Id : 19088916802 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Given below are two statements

Statement I: In inbreeding, gene frequency does not change but genotypic frequency changes from generation to generation

Statement II: Coefficient of parentage defines the inbreeding coefficient of offspring

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 :

19088967101. 1

19088967102. 2

19088967103. 3

19088967104. 4

Question Number : 102 Question Id : 19088916803 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following statements is ***most appropriate*** about selection differential?

1. It is difference in means of the offspring and that of their parents
2. It is difference in means of the crosses and that of their parents
3. It is difference in means of the selected individuals and that of the base population
4. All the above three statements are correct.

Options :

19088967105. 1

19088967106. 2

19088967107. 3

19088967108. 4

Question Number : 103 Question Id : 19088916804 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Precision of an experiment is given as

1. $\frac{\sigma^2}{n}$
2. $\frac{n}{\sigma^2}$
3. $\frac{n}{\sigma}$
4. $\frac{\sigma}{n}$

Options :

19088967109. 1

19088967110. 2

19088967111. 3

19088967112. 4

Question Number : 104 Question Id : 19088916805 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The efficiency factor of a BIB design with v, b, r, k, λ is given as

1. rk/ λv
2. λv/rb
3. λv/rk
4. λr/bk

Options :

19088967113. 1

19088967114. 2

19088967115. 3

19088967116. 4

Question Number : 105 Question Id : 19088916806 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If in a block design with v treatments, every element of incidence matrix (N) of the design is non- zero, then the design is

1. connected
2. not connected
3. complete
4. None of the above

Options :

19088967117. 1

19088967118. 2

19088967119. 3

19088967120. 4

Question Number : 106 Question Id : 19088916807 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which type of optimality criteria is determined by determinant of the covariance matrix of the design?

1. A Optimality
2. D Optimality
3. E optimality
4. UV Optimality

Options :

19088967121. 1

19088967122. 2

19088967123. 3

19088967124. 4

Question Number : 107 Question Id : 19088916808 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In a 2^3 Factorial experiment, the second order interaction effect of the factor A, B and C will be

1. $(\frac{1}{4})(a-1)(b-1)(c+1)$
2. $(\frac{1}{4})(a+1)(b+1)(c+1)$
3. $(\frac{1}{4})(a-1)(b-1)(c-1)$
4. $(¾)(a-1)(b-1)(c-1)$

Options :

19088967125. 1

19088967126. 2

19088967127. 3

19088967128. 4

Question Number : 108 Question Id : 19088916809 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In a strip plot design, which type of contrast is given more importance

1. Vertical main effects
2. Horizontal main effects
3. Interaction effects
4. None of the above

Options :

19088967129. 1

19088967130. 2

19088967131. 3

19088967132. 4

Question Number : 109 Question Id : 19088916810 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The relationship between Hotelling's T^2 and Mahalanobis generalized D^2 statistic for two samples with n_1 and $n_2$observations respectively is given by

1. $T^2 = \frac{n_1 n_2}{n_1 + n_2} D^2$
2. $T^2 = \frac{n_1 + n_2}{n_1 n_2} D^2$
3. $T^2 = 1 + \frac{n_1 n_2}{n_1 + n_2} D^2$
4. $T^2 = 1 + \frac{n_1 + n_2}{n_1 n_2} D^2$

Options :

19088967133. 1

19088967134. 2

19088967135. 3

19088967136. 4

Question Number : 110 Question Id : 19088916811 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If X is uniformly distributed with mean 1 and variance 4/3, then $P[X < 0]$ is

1. $\frac{1}{3}$
2. $\frac{3}{4}$
3. $\frac{1}{2}$
4. $\frac{1}{4}$

Options :

19088967137. 1

19088967138. 2

19088967139. 3

19088967140. 4

Question Number : 111 Question Id : 19088916812 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. Having both sampling and non-sampling errors	I. Census
B. Sampling errors are absent	II. Sample survey
C. Sample size $S = \frac{\chi^2 NP(1-P)}{d^2(N-1) + \chi^2 P(1-P)}$ χ^2 = the table value of χ^2 for one degree of freedom at the desired confidence level N = the population size P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size) d = the degree of accuracy expressed as a proportion (0.05)	III. Infinite population
D. Sample size $S = \frac{(Z-\text{score})^2 \times Sd\,(1-Sd)}{(\text{Margin of error})^2}$ Z – score is the table value of Z at the desired level of significance and Sd is the standard deviation of the population	IV. Finite population

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

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

Options :

19088967141. 1

19088967142. 2

19088967143. 3

19088967144. 4

Question Number : 112 Question Id : 19088916813 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Probability of drawing a particular unit in any draw -

A. remains the same in each draw following the SRSWR

B. remains same in each draw following the SRSWOR

C. from a stratum remains same following PPS method of sampling

D. remains same in each draw following the SRSWR and SRSWOR

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

1. A and B are correct; C and D are incorrect
2. A and B are incorrect; C and D are correct
3. A, B and C are correct; D is incorrect
4. A, B and D are correct; C is incorrect

Options :

19088967145. 1

19088967146. 2

19088967147. 3

19088967148. 4

Question Number : 113 Question Id : 19088916814 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.Uniformity trial	I. Homogenous experimental units
B. CRD	II. One way heterogeneity
C. RBD	III. Two way heterogeneity
D. LSD	IV. Heterogeneity not known

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

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

Options :

19088967149. 1

19088967150. 2

19088967151. 3

19088967152. 4

Question Number : 114 Question Id : 19088916815 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If we delete a single column from a Latin square, the resultant design will be considered as

1. Incomplete Latin square Design
2. Youden Square Design
3. Lattice Design
4. BIB Design

Options :

19088967153. 1

19088967154. 2

19088967155. 3

19088967156. 4

Question Number : 115 Question Id : 19088916816 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In a factorial experiment, when there are 2^k blocks in a replication where r is the number of replications, then $(2^k - 1)$ interactions are confounded. Of these confounded interactions, the number of interactions that are independent and that are generalized are respectively

1. $(k+1)$ and $(2^k - k - 2)$
2. k and $(2^k - k - 1)$
3. $(2^k - k - 1)$ and k
4. $(k-1)$ and $(2^k - k)$

Options :

19088967157. 1

19088967158. 2

19088967159. 3

19088967160. 4

Question Number : 116 Question Id : 19088916817 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

The correlation coefficient between the age (in years) pairs of 25 married couples was 0.72 in year 1995. Then the correlation coefficient between their age pairs in the year 2020.

1. will be less than 0.72
2. will be same as 0.72
3. will be greater than 0.72
4. can not be ascertained

Options :

19088967161. 1

19088967162. 2

19088967163. 3

19088967164. 4

Question Number : 117 Question Id : 19088916818 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Least Significant Difference (LSD) or Critical Difference (CD) is worked out when

1. Corresponding F test is non significant
2. Corresponding F test is significant
3. Error degrees of freedom is less than 12 in ANOVA
4. None of the above

Options :

19088967165. 1

19088967166. 2

19088967167. 3

19088967168. 4

Question Number : 118 Question Id : 19088916819 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. Simple Random Sampling	I. Homogenous population
B. Probability Proportional to Size Sampling	II. Varying sampling units
C. Stratified Sampling	III. Heterogenous population
D. Cluster Sampling	IV. Group of sampling units

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

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

Options :

19088967169. 1

19088967170. 2

19088967171. 3

19088967172. 4

Question Number : 119 Question Id : 19088916820 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Let $Y_1 < Y_2 < Y_3 < Y_4$ denote the order statistics of a random sample of size 4 from a distribution having probability density function

$$f(x) = \begin{cases} 2x, & 0 < x < 1 \\ 0, & elsewhere \end{cases}$$

Then $P\left[Y_3 > \frac{1}{2}\right]$ is

1. $\frac{13}{128}$
2. $\frac{39}{64}$
3. $\frac{243}{256}$
4. $\frac{1}{16}$

Options :

19088967173. 1

19088967174. 2

19088967175. 3

19088967176. 4

Question Number : 120 Question Id : 19088916821 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

In a Balanced Incomplete Block design (v, b, r, k, λ), the parametric relations are

1. vr = bk;λ (v-1) = r(k-1) and b ≤ v
2. vk = br;λ (v-1) = r(k-1) and b ≤ v
3. vr = bk;λ (v-1) = r(k-1) and b ≥ v
4. vr = bk;λ (k-1) = r(v-1) and b ≤ v

Options :

19088967177. 1

19088967178. 2

19088967179. 3

19088967180. 4