

In the sign table for factorial design, except for the first column M, every column has

Select the correct option

☐

More " - " signs than " + " signs

☐

There is no such rule.

☐

More " + " signs than " - " signs

☐

An equal number of " + " and " - " signs



In a $2 \times 2 \times 2$ factorial experiment, the possible treatment combinations can be

Select the correct option



6



4



2



8

Applications of experimental designs include:

Select the correct option

☐	optimizing a process
☐	determine system and component energy
☐	terminologies of experiment
☐	none of these

Sir Ronald A Fisher was the pioneer in the use of:

Select the correct option



statistical method



none of these



physical method



physical method

In a $2 \times 2 \times 2$ factorial experiment, if the factors A, B and C are of interest and Sum of Squares for factor A (SSA) is 217.56, the Mean Square for factor A (MSA) will be

Select the correct option

☐

54.39

☐

108.78

☐

27.195

☒

217.56



In a factorial design, three factors; A, B and C each at two levels are of interest, if the number of replicates is "n" then the total degrees of freedom for such design will be

select the correct option

☐

$$abc(n-1)$$

☐

$$(a-1)(b-1)(c-1)$$

☐

$$abcn-1$$

☐

$$2n(a-1)(b-1)(c-1)$$

How many second order interactions are possible in a $2 \times 2 \times 2$ factorial design?

Select the correct option

☒	1
☐	3
☐	0
☐	2

The possible interaction effects in a $2 \times 2 \times 2$ factorial experiment are

Select the correct option

☐	10
☐	8
☒	4
☐	6

Which of the following test is considered for comparing all pairs of sample means?

Select the correct option

☐	Chi Square Test
☐	F-test
☐	t-test
☐	Duncan's Multiple Range Test

Duncan's test was developed by Duncan in;

Select the correct option

☐	1965
☐	1955
☐	1950
☐	1960

Experiments are carried out to validate and support a hypothesis but they base on

Select the correct option

☐

logical analysis of result

☐

to make observation in data form

☐

none of these

☐

paradigm of random experiment



Question # 4 of 10 (Start time: 11:08:08 PM, 16 July 2023)

Duncan's test is very powerful when _____ exist between means;

Select the correct option

☐	trust
☐	similarity
☐	difference
☐	nothing

Which one is not the main objective of experiment:

Select the correct option

☐	to achieve desired response
☐	to verify the hypothesis
☐	to keep the variability of response small
☐	to make system robust against outliers

In a $2 \times 2 \times 2$ factorial experiment, if the number of replicates is 2 then the degrees of freedom for error will be

Select the correct option



4



2



6



8

8

The sum of products of signs in any two columns is zero that is any two columns are

Select the correct option

☐	Parallel
☐	Correlated
☒	Orthogonal
☐	Multinomial

In a factorial design, three factors; A , B and C each at two levels are of interest, such design is called

tion



Reload Math Equations

2^2 factorial design

3^2 factorial design

3^3 factorial design

2^3 factorial design



Main focus in experiment designs includes the establishment of

Select the correct option

☒	validity
☐	none of these
☐	reliability
☐	stability

_____ is required for all types of organization whether its politics , social , culture or business.

Select the correct option

☐	money
☐	planning
☐	hardworking
☐	energy

The possible interaction effects in a $2 \times 2 \times 2$ factorial experiment are

Select the correct option

☒	4
☐	8
☐	6
☐	10

Duncan's test is used to compare all pairs of;

Select the correct option



means



variables



extreme

In the Duncan's Multiple Range Test, what is "p"?

Select the correct option



p is the number of steps between two means being compared



none of these



p is number of means



p is sample size

In a $2 \times 2 \times 2$ factorial experiment, if the number of replicates is 2 then the degrees of freedom for error will be

Select the correct option



8

—



4



2



6

How many second order interactions are possible in a $2 \times 2 \times 2$ factorial design?

Select the correct option



2



1



0



3