Assignment 11

Many experiments cannot continue for a long time without any reliable results or final conclusions. The approach used for experimentation is often a key:

- a. procedural design approach
- b. functional design approach
- c. factorial design approach
- d. none of the above

Where the levels of different factors are studied under a given level of another factor, the design is called a:

- a. single factor design
- b. factorial design
- c. nested design
- d. full factorial design

In any experimentation, both main effects and interaction effects among the factors need to be considered. When we talk about the effect of an experimental design type, we are not talking about:

- a. any factor
- b. one factor at a time approach
- c. two factors
- d. factorial design

The main purpose of conducting an experiment is:

- a. to identify the input and output
- b. to process the input and output
- c. to understand the relationship among inputs, outputs and the main variable
- d. to study the performance of a process or a system

With two factors, each at two levels, the total number of treatments combinations with these implications for each experiment combination is:

- a. 8
- b. 12
- c. 16
- d. 32

Randomization is considered one of the important principles to be followed in experimental design. This principle is especially important when:

- a. the response variables are in mutual control
- b. the response variables are not in a controlled order
- c. the order of the environment is not a variable
- d. the experimental units need to be conducted by a single operator only

Randomization in time

Current plate is used to depict the interaction effects among the factors in experimentation. If there is an interaction effect between factors A and B, the one of the grid contains:

- a. parallel to the interactions of the factors, A and B
- b. parallel to the interactions of the factors, A and B
- c. the actual data of the interactions are related with respect to the size of the factors, A
- d. All of the above

Randomization in time

The number of treatments combinations in a 3×3 factorial design experiment is:

- a. 3
- b. 6
- c. 9
- d. None of the above

Randomization in time

Factorial experiments can vividly used in manufacturing or service systems when:

- a. the number of factors is very large
- b. the number of treatments of every level is at least two
- c. both of the factors must be considered
- d. the number of factors and their levels are fixed in number

Randomization in time

In a 3×3 factorial design, the number of three-way interaction is:

- a. 15
- b. 12
- c. 18
- d. 6

Randomization in time