

EXST7015 : Daily Design Question 10

Carefully read the description of the experiment below. Be prepared to answer the questions that follow the design description as a class quiz.

A newspaper company is examining several new formulations of ink as possible replacements to the old ink they have been using. The interest in a new ink was prompted by complaints from readers of “ink rub-off”. The company technicians know that there are a lot of factors affecting the amount of ink that “rubs off”. A number of these factors have been set constant (e.g. standard newsprint paper, print density of 1.0, drying time of 2 hours). Once these factors are considered, there are a number of commercial formulations that are of interest; (1) soy ink, (2) Super Standard from US Ink, (3) Low Rub from US Ink, (4) Rub Pruf from US Ink and (5) the old standard ink that is currently being used, and which will form a basis for comparison.

Each of the 5 ink formulations are used to prepare 10 identical printed documents in random order using procedures that are identical except for the ink used. After 2 hours of drying time each ink is tested for “rub off” characteristics. A quantitative estimate of the percent of ink lost is made for each document. The variable of interest is the percent ink lost.

Questions:

What is the treatment arrangement for this experiment?

- (a) single factor (b) factorial (c) nested

What is the experimental design for this experiment?

- (a) CRD (b) RBD (c) LSD (e) Split-plot (d) Repeated Measures

Does it seem to you that the treatments are fixed or random?

- (a) fixed (b) random

What is the experimental unit for this experiment?

- (a) ink formulation (b) rub-off (c) hour (d) document (e) % ink lost

What is the sampling unit for this experiment?

- (a) ink formulation (b) rub-off (c) hour (d) document (e) % ink lost

What is the dependent variable for this experiment?

- (a) ink formulation (b) rub-off (c) hour (d) document (e) % ink lost

If the design is RBD, what are the blocks?

- (a) ink formulation (b) rub-off (c) hour (d) document (e) % ink lost

How many degrees of freedom are available for testing the treatments?

Enter the correct value here: _____