EXST7015 : Daily Design Question 08

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

An ecologist is interested in studying the "seed bank" in a region of the Mojave desert of California. He plans to test the seed bank by sampling the surface sand in the desert and culturing the samples for a plant called the "Desert Sand Verbena" (*Abronia villosa*).

For his initial experiment he wants to develop a good technique for culturing Desert Sand Verbena from samples. He has two potting soil mixtures that have been recommended for the culture (mix A and mix B) of Desert Sand Verbena and he plans to examine each mixture at two watering regimes (light and heavy watering). He prepares 20 replicated plant pots with each of the four treatment combinations (80 pots total). He then goes to an area of the desert where Desert Sand Verbena is known to flourish and takes a large sample of sand that he then completely mixes in a large tub. He then adds 100 g of the mixed sand to each of the 80 pots. The number of Desert Sand Verbena plants that have germinated within the first 10 days is used as the dependent variable.

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) Verbena (b) plants (c) pot (d) seed bank (e) days (f) large tub of sand

What is the sampling unit for this experiment?

  (a) Verbena (b) plants (c) pot (d) seed bank (e) days (f) large tub of sand

What is the dependent variable for this experiment?

  (a) Verbena (b) plants (c) pot (d) seed bank (e) days (f) large tub of sand

If the design is RBD, what are the blocks?

  (a) Verbena (b) plants (c) pot (d) seed bank (e) days (f) large tub of sand

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

   Enter the correct value here: _____