EXST7015 **Daily Design 20**

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

A student from an Agricultural Engineering school is studying the use of cow and pig manure as fertilizer (manure source is of interest). The manure was applied in one of two forms, fresh or processed (manure form is also of interest). The fresh manure was applied before planting and again after 3 months. The processed manure was applied every 3 days as a liquid effluent from a "biodigester". The four combinations were then cow-fresh, pig-fresh, cow-effluent and pig-effluent.

The four combinations were applied to a cassava crop for 5 months (1/12/97 to 30/4/98). The cassava plants were arranged in three irrigated fields such that each treatment occurred once in each field in a randomly assigned 4 x 2.5 m plot. Fields are a potential source of variation, but is not a source of interest. How would this experiment be analyzed if the variable of interest was the total combined biomass from two harvests (at 3 and 5 months) from the plots in each field, at total of 12 values?

Answer choices:	**(A) manure source**	**(B) manure form**	**(C) fields**
	(D) total biomass	**(E) months**	**(F) plot**

Name _____ **Quiz Number** ____ **Date** _____ / _____ / **2012**

Circle the appropriate letter for each question.

1) What is the experimental unit for this experiment? A B C D E F

2) What is the sampling unit for this experiment? A B C D E F

3) What is the dependent variable for this experiment? A B C D E F

4) What is the treatment variable for this experiment? A B C D E F

5) If the design is RBD, what are the blocks? A B C D E F NA

6) Does it seem more likely that the treatments are fixed or random? (A) fixed (B) random

7) What is the treatment arrangement for this experiment? (A) single factor (B) factorial (C) nested

8) What is the experimental design? (A) CRD (B) RBD (C) LSD (D) Split-plot (E) Repeated Measures

9) The treatment degrees of freedom are _____ .

10) The degrees of freedom for the error used for testing treatments are _____ .