Review of ANOVA

An experiment to test the effect of dietary chocolate on levels of the stress hormone cortisol in graduate students is designed with 6 treatments and 6 replicates. Give the sources and degrees of freedom and indicate all F-tests for the fixed model with arrows given the following conditions:

A. The experiment is installed as a completely randomized design.

B. The experiment is installed as a randomized complete block design (RCBD), with students blocked on previous academic performance.

C. The experiment is installed as a Latin square design with 6 students (columns) each receiving each treatment over 6 time periods (rows).

D. The experiment is installed as a RCBD and 4 blood samples are taken from each student.

E. The experiment is installed as a RCBD and sugar intake is measured as a covariate.

F. The experiment is installed as a RCBD and the treatments are 6 equally spaced levels of

chocolate in the diet. Divide up the treatment degrees of freedom appropriately.

G. The experiment is installed as a RCBD and the treatments are 2 levels of sugar and 3 levels of chocolate arranged in a 2 x 3 factorial. Divide up the treatment degrees of freedom appropriately.

H. The experiment is installed as a split plot with 2 levels of previous chocolate intake in the main plot and 3 levels of added chocolate in the split plot.