**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**NOTE: Type your answers in the appropriate fields; please make answer fields larger as needed. Please turn in a printed copy to Joe during next Friday’s lab or Melissa’s mailbox by 12 PM next Friday (please contact Melissa regarding exceptions; e.g., illness and travel). Please note, assignments will lose 5% of the total possible points for each day they are late.**

*Conceptual Questions*

1. Calculate the between and within *df* for the following conditions.

a. Five conditions (e.g., placebo, dose 1, dose 2, dose 3, and dose 4) with N = 100?

b. Three conditions with N = 45?

c. Eight conditions with N = 200?

d. Four conditions with N = 36?

1. Use the F-table provided in the hw05 folder on smartsite.

a. What is the critical F-value given an alpha of .05 and *df* between of 2 and *df* within of 20?

b. What is the critical F-value given an alpha of .05 and *df* between of 4 and *df* within of 30?

c. What is the critical F-value given an alpha of .05 and *df* between of 3 and *df* within of 100?

d. What is the critical F-value given an alpha of .01 and *df* between of 5 and *df* within of 50?

3. In your own words, explain what the between and within SS from an ANOVA table represents? Why do you think these values are divided by their respective *df* in order to estimate MS and then the F value? Why does the one-way ANOVA not help researchers understand where differences between conditions are, but can be used to determine if there are significant differences between conditions?

*Computational Problems* – Complete by hand, you may use a calculator, show all work.

For intermediary calculations (e.g., mean and sd) round to four decimal places. Round your final answer to two decimal places.

3. Complete the follow ANOVA table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Source | df | SS | MS | F | P |
| Between |  | 2,510.5 |  |  |  |
| Within | 12 |  |  | Ddddddddddd | Ddddddddddd |
| Total | 14 | 2,671.7 | Ddddddddddd | Ddddddddddd | Ddddddddddd |

4. Complete the follow ANOVA table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Source | df | SS | MS | F | P |
| Between |  | 16 |  |  |  |
| Within | 95 |  | 1.2 | Ddddddddddd | Ddddddddddd |
| Total | 99 |  | Ddddddddddd | Ddddddddddd | Ddddddddddd |