Assignment 6 (Week-6)

Submitted assignment

1) In ANOVA, "factor" refers to-   *1 point*

   ○ The dependent variable

   ◉ The independent variable

   ○ Different levels of treatment

   ○ The critical value of F

2) In ANOVA, if there are 3 treatments and 10 observations per treatment, and SSE = 399.6, then the MSE for this situation is –   *1 point*

   ○ 15.8

   ◉ 14.8

   ○ 30.0

   ○ 21.9

3) Which of the following is an assumption of one-way ANOVA comparing samples from three or more experimental treatments?   *1 point*

   ○ All the response variables within the k populations follow a normal distribution.

   ○ The samples associated with each population are randomly selected and are independent from all other samples.

   ◉ All of the above.

○ None of the above.

4) In ANOVA with 4 groups with sample size of 11 per group, the computed F statistic is 2.33 The p-value is: *1 point*

○ exactly 0.05

○ less than 0.05

○ greater than 0.05

◉ cannot tell - it depends on what the SSE is

5) **The Q.(5-10) are to be answered based on the data given below.** *1 point*

In order to evaluate safety performance of employees across 3 departments, 5 employees across each department were randomly monitored and their safety behavior on a 100-point scale is given below.

Safety Performance

	Emp-1	Emp-2	Emp-3	Emp-4	Emp-5
Dept. 1	68	73	75	65	78
Dept. 2	85	85	78	86	79
Dept. 3	73	77	72	70	76

The degree of freedom for the factor department is-

◉ 2

○ 3

○ 4

○ None of these.

6) The SSE and MSE values of the factor department are- *2 points*

○ (200.3, 14.96)

○ (200.1, 13.56)

◉ (201.2, 16.76)

○ (210.2, 19.06)

7) The computed F based on the given data is - *2 points*

○ 9.98

○ 19.50

◉ 15.88

○ 20.12

8) Do the departments differ in their safety behaviour -   *1 point*

◉ Yes

○ No

9) What test do you suggest to test the equality of variance of mean safety performance across the three departments?   *1 point*

○ a) Modified Levene's test

○ b) Bartlett's test

◉ c) Both of (a) and (b)

○ d) None of the above

10) Is the equality of variances held across the departments?   *3 points*

◉ Yes

○ No

11) In ANOVA, the SSE statistic measures the variation   *1 point*

○ (a) between groups

◉ (b) within group

○ (c) both (a) and (b)

○ (d) None of these