Statistical Methods II M536 – ASSIGNMENT #6 – SPRING 2021 – KSR – [35 PTS]

Due at the beginning of class on FRIDAY: MARCH 12, 2021.

Students are free to discuss problems among themselves. HOWEVER,
each student is required to submit work that is his or her own work,
and is not a "direct" copy of another student's work.

Copying of another student's ASSIGNMENT will be handled
under the Millersville University academic honesty policy.
PROBLEMS or QUESTIONS: SEE THE INSTRUCTOR IMMEDIATELY.

You may use MINITAB, SAS, R, Web Applets, etc. ... please provide
the output to support and justify your answers; when appropriate.

Please make the assignment write-up: organized, presentable, etc.

==
****

Whenever possible data-sets should be analyzed using
descriptive techniques (both graphical and numerical).

All analyses (testing, confidence intervals, etc.)
should have conclusions/interpretations worded in terms of the problem.

Reject H_0 or (1.2, 5.3) is not a sufficient conclusion
what do these things mean; answer the question of interest, etc.

****
==

1) [10 PTS] page 1085 #17.14

2) [10 PTS] pages 1089-1090 #17.33

3) [5 PTS] Five laboratories (factor B) cooperated in comparison of their
testing procedures for impact strength of a certain type of fiberboard.
The tests were conducted over a period of 3 days (factor A). On day one,
panels from two batches (factor C) of board were sent (by a certain
manufacturer) to the five laboratories (all five laboratories tested the
same two batches). Each laboratory tested each batch in duplicate. On days
two and three, the same process was repeated using two new batches (from
the same manufacturer) on each of these two days.

What is the appropriate population structure for this experiment?
[[Use the following subscripts:
[[i for A, j for B, k for C and l for the replications.

4) [10 PTS] The surface finish of metal parts made on four machines selected at random from an assembly process is being studied. An experiment is conducted in which each machine is run by three different operators and two specimens from each operator are collected and tested. Because of the location of the machines, different operators are used on each machine, and the operators are chosen at random.

The data are given below. Analyze the data and draw conclusions.

Machine1
Oper1 79 62
Oper2 94 74
Oper3 46 57

Machine2
Oper4 92 99
Oper5 85 79
Oper6 76 68

Machine3
Oper7 88 75
Oper8 53 56
Oper9 46 57

Machine4
Oper10 36 53
Oper11 40 56
Oper12 62 47

Machine1	Oper1	79
Machine1	Oper1	62
Machine1	Oper2	94
Machine1	Oper2	74
Machine1	Oper3	46
Machine1	Oper3	57
Machine2	Oper4	92
Machine2	Oper4	99
Machine2	Oper5	85
Machine2	Oper5	79
Machine2	Oper6	76
Machine2	Oper6	68
Machine3	Oper7	88
Machine3	Oper7	75
Machine3	Oper8	53
Machine3	Oper8	56
Machine3	Oper9	46
Machine3	Oper9	57
Machine4	Oper10	36
Machine4	Oper10	53
Machine4	Oper11	40
Machine4	Oper11	56
Machine4	Oper12	62
Machine4	Oper12	47