BUS292 STATISTICS II
2020–2021 SPRING TERM MAKEUP EXAM

BEFORE THE EXAM, PLEASE VERY CAREFULLY READ THE DIRECTIVES BELOW

DIRECTIVES

- Deadline is today (June 7, 2021) at 19:00 pm. Please submit your answers, before the deadline, over the system (http://ue6.mersin.edu.tr). Do not submit your answers through e-mail. Any answers submitted through e-mail will be discarded and absolutely no excuse will be accepted.
- Do not rewrite the questions again. Just provide your name, last name and student number along with your answers. No cover page is necessary.
- You can provide your answers in any format you like (e.g., word, pdf, jpg, etc.). You may also answer the questions by handwriting. If you answer the questions by handwriting, just take the picture of every page and submit the pictures. Please do not forget to include your name, last name and student number in every page you submit.
- Do your homework all by yourself. Never use or copy your friend's homework. Working data for every student depends on the student number and therefore unique for each student. So, it will certainly be detected if you use or copy your friend's homework. Both you and your friend will get zero grade in such case. Therefore, neither use/copy your friend's homework nor give/show your homework to your friend. Do your homework all by yourself.
- In the following questions, use your student number to obtain the values for a, b and c. The last digit of your student number is "a", second last digit is "b", third last digit is "c" and finally second digit of your student number is "d". If any of these digits is zero, then assume it as 5. You can find the values of a, b, c and d by looking at your student number as follows: 1d-231-cba. For instance, if your student number is 12-231-174 then substitute d=2, c=1, b=7 and a=4. If your student number is 12-231-074 then substitute d=2, c=5, b=7, a=4. Please note that in this case c=5 because the corresponding digit of the student number is 0. Please carefully find the correct values of a, b, c and d using your student number. Any incorrect use of your student number will result a very low grade from the exam.
- This is not a test exam. Therefore, you should provide all the details of your answers, not just the results. Failing to provide the details will result a big loss of grade. Do not use computer and show your logic when solving the questions. Provide the formulas you used in computations. I will not give any credit if you just give the answers without details and logic (even if the answer is correct).
- Use the Z, t and Chi-Square table values only from the tables in your textbook. Do not use Excel functions.
- Round the non-integer numbers only up to two decimal points. Do not round them to integers. For example if any result is 2.5553 then round it to 2.56, not to 3.
- The sign * means multiplication. For instance 8*2 = 16.
- Give your answers in English. Do not use Turkish.
- There are 3 questions in this exam.

Good Luck. Prof. Dr. Tevfik AYTEMİZ

QUESTIONS

1) Your supplier has delivered your orders. At the time of delivery, you inspected randomly selected 9*a*b products and observed that 2*c of them are defective. Form a (100-a-b-c)% confidence interval for the percentage of defectives in your order. **(30 Points)**

(Please explicitly show the formula you used in solving the question and do not forget to substitute the letters "a", "b" and "c" with the corresponding digits of your student number. If any of "a", "b" or "c" is zero, set those to 5. Use the statistical tables only in your textbook. Do not use Excel functions for the table values.)

2) A researcher wants to estimate the difference between the mean score points of home and visitor teams in a basketball game. For this purpose, researcher randomly selects 15+a+b basketball games and obtains their scores. In these games, home teams' mean score is 70+c+d points with a standard deviation of a*d points while visitor teams' mean score is 70+a+b points with a standard deviation of b*c points. Assuming equal population variances, find the (100-a)% confidence interval for the difference between the mean score points of home and visitor teams. **(35 Points)**

(Please explicitly show the formula you used in solving the question and do not forget to substitute the letters "a", "b", "c" and "d" with the corresponding digits of your student number. If any of "a", "b", "c" or "d" is zero, set those to 5. Use the statistical tables only in your textbook. Do not use Excel functions for the table values.)

3) In finance theory, risk of an investment is measured by its variance. A broker wants to estimate the risk of a certain stock. For this purpose, broker records the closing prices of this stock for 8 days in the past. Recorded closing prices (in $) are given below. Based on the records given below, form a (100-b)% confidence interval for the daily risk of this stock. **(35 Points)**

a*b a*c a*d b*c b*d c*d 7*a 8*b

(Please explicitly show the formula you used in solving the question and do not forget to substitute the letters "a", "b", "c" and "d" with the corresponding digits of your student number. If any of "a", "b", "c" or "d" is zero, set those to 5. Use the statistical tables only in your textbook. Do not use Excel functions for the table values.)