OLABISI ONABANJO UNIVERSITY, AGO-IWOYE

FACULTY OF SOCIAL AND MANAGEMENT SCIENCES

DEPARTMENT OF ECONOMICS, 2016/2017 SESSION, MID-SEMESTER EXAMINATION
TIME ALLOWED: 1 Hour. COURSE CODE/ TITLE: ECO 305: STATISTICS

INSTRUCTION: **Attempt any two (2) questions**

1. (a) Under what conditions is t-test appropriate? And what are the steps required to test hypothesis?

   (b) Students in Statistics class in OOU question the claim that McDonald's puts 0.25 naira of beef in their "quarter-pounders". Some students argue that more is actually used, while others insists it is less. To test the advertising claim that the mean weight is 0.25 naira, each student buys a quarter-pounder and brings it to class, where it is weighted on a scale provided by the Instructor. The sample results are $\bar{X} = 0.22$ naira and standard deviation, S = 0.08. If there are 25 students in class, what conclusions did they reach at 5% level of significance?

2. (a) Achievers' Club of Ago-Iwoye reported in its monthly publication Ago Dog Owners (January, 2016) that one-year-old water cocker spaniels should weigh slightly over 50 pounds if they have received the proper nutrition. To test the hypothesis, Mr. Hope, the maker of dietary dog food, weigh 16 one-year-old cockers and finds a mean of 51.19 pounds, with standard deviation s = 5.92 pounds. Selecting a 1% probability of a Type I error, solve the problem and advise accordingly.

   (b) Distinguish between Type I and Type II errors in decision making? How does the errors influence the typical t-values?

3. (i) What do you understand by ANOVA? And of what relevance is ANOVA in decision making process? (ii) The Table below shows the yields in bushels per acre of a certain variety of wheat grown in a particular type of soil treated with chemicals A, B, C.

A	B	C
50	48	51
50	49	52
51	50	51
49	49	50

Find (a) the mean yields for the different treatments; (b) the grand mean for all treatments; (c) the total variation; (d) the variation between and within treatments; and (e) the F-ratio and test the hypothesis that the population means are the same at 5% level of significance and construct ANOVA table ($F_{\alpha\,[k-1,\,n-k]} = 4.26$).