

SECOND SEMESTER M.A. DEGREE EXAMINATION, JUNE 2018

(CCSS)

Economics

ECO 2C 07—STATISTICS FOR ECONOMICS

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

1. Since the population size is always larger than the sample size, then the sample statistic :
 - (a) Can never be larger than the population parameter.
 - (b) Can never be equal to the population parameter.
 - (c) Can never be zero.
 - (d) Can never be smaller than the population parameter.
2. The mean of a sample is :
 - (a) Always equal to the mean of the population.
 - (b) Always smaller than the mean of the population.
 - (c) Computed by summing the data values and dividing the sum by $(n - 1)$.
 - (d) Computed by summing all the data values and dividing the sum by the number of items.
3. The difference between the largest and the smallest data values is the :
 - (a) Variance.
 - (b) Interquartile range.
 - (c) Range.
 - (d) Co-efficient of variation.
4. The variance of a sample of 81 observations equals 64. The standard deviation of the sample equals :
 - (a) 0.
 - (b) 4096.
 - (c) 8.
 - (d) 6,561.

5. Which of the following is not a measure of dispersion ?

- (a) The range.
- (b) The 50th percentile.
- (c) The standard deviation.
- (d) The interquartile range.
- (e) The variance.

6. In binomial probability distribution, dependents of standard deviations must includes :

- (a) Probability of q .
- (b) Probability of p .
- (c) Trials.
- (d) All of above.

7. If a hypothesis is rejected at the 0.025 level of significance, it :

- (a) Must be rejected at any level.
- (b) Must be rejected at the 0.01 level.
- (c) Must not be rejected at the 0.01 level.
- (d) Must not be rejected at any other level.

8. In a two-tail test for the population mean, if the null hypothesis is rejected when the alternative is true, then :

- (a) A Type I error is committed.
- (b) A Type II error is committed.
- (c) A correct decision is made.
- (d) A one-tail test should be used instead of a two-tail test.

9. The p -value of a test is the :

- (a) Smallest significance level at which the null hypothesis cannot be rejected.
- (b) Largest significance level at which the null hypothesis cannot be rejected.
- (c) Smallest significance level at which the null hypothesis can be rejected.
- (d) Largest significance level at which the null hypothesis can be rejected.

10. A co-efficient of correlation is computed to be -0.95 means that :

- (a) The relationship between two variables is weak.
- (b) The relationship between two variables is strong and positive.
- (c) The relationship between two variables is strong and but negative.
- (d) Correlation co-efficient cannot have this value.

Part B

Answer any **eight** questions.
Each question carries 5 marks.

11. What is sign test ? Explain.
12. Define type II error.
13. Explain the small and large sample properties of Z.
14. Teachers of school A informed that some of their students showed unusual potential for intellectual gains. Eight months later the students identified as having potential for unusual intellectual gains showed significantly greater gains performance on a test said to measure IQ than did children who were not so identified. Below are the data for the students in the first grade :

Table 1 : Scores for First Graders :

<i>Experimental</i>	:	35	40	12	15	21	14	46	10	28	48	16	30
						32	48	31	22	12	39	19	25
<i>Comparison</i>	:	2	27	38	31	1	19	1	34	3	1	2	3
							1	2	1	3	29	37	2

$$\text{Mean of experimental} = 27.15 \quad \text{Comparison} = 11.95$$

$$\text{SD experimental} = 12.51 \quad \text{SD comparison} = 14.62$$

Calculate t value.

15. Differentiate between one tailed and two tailed test.
16. Analyse the fishers properties of estimates.
17. Examine log normal distributions.
18. Examine Wa-Wolfowitz test.
19. A bag has 3 white and 4 red balls .Two balls are randomly drawn from the bag. How many white balls are expected from the draw ?
20. Explain Chi-square test.
21. What do you mean critical region explain ?
22. Briefly explain method of maximum likelihood.

(8 × 5 = 40 marks)

Part C

*Answer any **two** questions.*

Each question carries 15 marks.

23. Explain Willcoxon-Mann Whitney U test.
24. Examine the significance of statistical inference in Economics.
25. Explain ANOVA with suitable examples.
26. Explain the importance of formulation and testing of hypothesis.