



UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

TOTAL MARKS: 100

PROGRAMME : B.Sc. ABE YEAR 2
: B.Sc. AG. ECON. & AGBMGT YEAR 2
: B.Sc. AG. EDUC. & EXT. YEAR 2
: B.Sc. ANI. Sc. YEAR 2
: B. Sc. ANI. Sc. (Dairy) YEAR 2
: B.Sc. AGRON. YEAR 2
: B.Sc. COS. YEAR 2
: B.Sc. COS ED. YEAR 2
: B.Sc. FSNT YEAR 2
: B.Sc. HORT. YEAR 2
: B.Sc. TADM YEAR 2

PAPER : **AEM 201**

TITLE OF PAPER : **ELEMENTARY STATISTICS**

TIME ALLOWED : **TWO HOURS**

INSTRUCTIONS

1. ANSWER QUESTIONS IN ALL SECTIONS

2. QUESTIONS CARRY MARKS AS INDICATED IN THIS PAPER.

3. USE ANSWER SHEET FOR ALL QUESTIONS.

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR.

SECTION - A**Write the letter of correct answer****Total Marks: 30 (03 marks each)**

1. Which statistic is/are much not affected by extreme values?

- [a] Mode [b] Median [c] Mean [d] St. Deviation [e] a & b
[f] c & d [g] None of these

2. If the mean of ten values is 75 and the nine of the values are 48, 71, 79, 56, 45, 96, 88, 75 and 66 then the tenth value will be

- [a] 70 [b] 65 [c] 45 [d] 80 [e] None of these

3. Which one is not a property of the normal probability distribution?

- [a] Symmetrical about the central mean value [b] Mean = Median = Mode
[c] Bell shaped curve [d] The tail of the curve is asymptotic [e] None of these

4. Given the following eight observations 5, 6, 9, 7, 8, 6, 6 and 5, then the 6 is ----- of those observations?

- [a] Mean [b] Median [c] Mode [d] range [] [e] None of these

5. A selection procedure of a sample having no involvement of probability is known as

- [a] Random sampling [b] Purposive sampling [c] Simple Random Sampling
[d] a & b [e] a & c [f] b & c [g] a, b & c [h] None of these

6. Eight establishments are to be selected from a list of 80 establishments by systematic random sampling. If the first number is 8, the next one is

- [a] 18 [b] 17 [c] 19 [d] 21 [e] 01
[f] None of these

7. Which of the following can never be negative value?

- [a] Standard Deviation [b] Median [c] Mean [d] Correlation Coefficient
[e] Probability [f] None of these

8. The sum of squares of deviations is least when measured from

- [a] Mean [b] Median [c] Mode [d] Zero [e] One
[f] None of these

9. If A and B are independent events then $P(A \cup B)$ is

- [a] $P(A)$ [b] $P(B)$ [c] $P(A) + P(B)$ [d] $P(A) - P(B)$ [e] $P(A) \times P(B)$
- [f] None of these

10. The coefficient of correlation will have negative sign when

- [a] X is increasing, Y is decreasing [b] Both X and Y are increasing
- [c] Both X and Y is decreasing [d] No change in X and Y [e] None of these

SECTION- B
(Total Marks: 50)

1. Find the mode wage of the following distribution **(Marks: 10)**

Wages (in \$)	20-30	30-40	40-50	50-60	60-70
No. of workers	03	05	20	10	05

2. The ranks of same 16 students in English (X) and Physics(Y) are as follows. **(Marks: 10)**

Statistics(X):	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mathematics(Y):	1	10	3	4	5	7	2	6	8	11	15	9	14	12	16	13

Calculate and explain the rank correlation coefficient for proficiencies of these subjects Statistics and Mathematics.

3. (i) Two balls are drawn from a bag containing 5 red and 7 white balls, find the probability that they both will be white. **(Marks: 10)**

(ii) A can solve 75% of the problems in mathematics book and B can solve 70%. What is the chance that either A or B can solve a problem chosen at random? **(Marks: 10)**

4. Samples of two types of electric light bulbs were tested for length of life and following data were obtained. **(Marks: 10)**

	Sample Size.	Sample Mean	Sample Standard deviation
Type I	8	1234 Hrs.	36 Hrs.
Type II	7	1036 Hrs.	40 hrs.

Is the difference in the means sufficient to warrant that type I is superior to type II regarding length of life?

SECTION- C
(Total Marks: 20)

Select any **Four** questions and short notes.

Total Marks: 20 (05 marks each)

- (i) Describe the Simple Random Sampling
- (ii) Explain the characteristics of good estimator
- (iii) What are the properties of Binomial distribution
- (iv) Describe the disadvantages of mode.
- (v) Explain the level of significance