



UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: : B.SC. AG. ECON. & AGBMGT YEAR 2
: B.SC. AG. EDUC. & EXT. YEAR 2
: B.SC. ANI. SCI. YEAR 2
: B. Sc. ANI. SCI. (D) YEAR 2
: B.SC. AGRON. YEAR 2
: B.SC. HORT. YEAR 2
: B.SC. ABE YEAR 2
: B.SC. COS YEAR 2
: B.SC. FSNT YEAR 2
: B.SC. TADM YEAR 2
: B.SC. COS ED. 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 THE 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: 20 (Each Question is 2.0 Marks)

1. If the mean of ten values is 70 and the nine of the values are 44, 72, 74, 56, 45, 95, 88, 75 and 66 then the tenth value will be

a. 75 [] b. 65 [] c. 45 [] d. 85 [] e. None of the above []

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

a. Mode [] b. Median [] c. Mean [] d. St. Deviation [] e. a & b []
f. None of the above []

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 are asymptotic []
e. None of the above []

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

a. Mean [] b. Median [] c. Mode [] d. range [] e. Variance []

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

a. Purposive sampling [] b. Subjective sampling [] c. Judgment sampling []
d. All the above []

6. Five establishments are to be selected from a list of 60 establishments by systematic random sampling. If the first number is 7, the next one is

a. 12 [] b. 18 [] c. 16 [] d. 19 [] e. 21 []
f. None of the above []

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

- 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 the above []

8. If each and every unit of the population has equal chance of being included in the sample, it is known as

- a. Restricted sampling []
 b. Purposive sampling []
 c. Random sampling []
 d. Simple random sampling []
 e. None of the above []

9. A manufacturer of television tubes has two types of tubes, A and B. The tube have respective mean life time $X_A = 45$ and $X_B = 38$ and Standard Deviation $SD_A = 41.8$ and $SD_B = 23.4$, which tube has the greater relative dispersion?

- a. Tube A [] b. Tube B [] c. Both are equal [] d. None of the above []

10. Select the correct missing value, Mean = ($3 \times \text{Median} - \text{Mode}$)

- a. 1 [] b. $\frac{1}{2}$ [] c. 2 [] d. 0 [] e. None of the above []

SECTION B

Select any three Questions

Total Marks: 60

1. A fish shop owner recorded the daily turnover in (US\$) of his outlet for 270 trading days shown in the frequency table

Daily Turn Over	10-25	25-40	40-55	55-70	70-85	85-95
No. of Days	10	18	50	87	60	45

a. Find the average turnover the fish shop

(Marks: 10)

b. Find the median daily turnover of the fish shop

(Marks: 10)

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2. The grades of 8 students on mid term report (X) and on the final examination (Y) are as follows (Marks: 20)

X	65	66	67	67	68	69	70	72
Y	67	68	65	68	72	72	69	71

Determine the strength of the relationship between the mid term and final exam scores.

3. (i) A bag contains 3 red, 6 white and 7 blue balls. What is the probability that two balls drawn are white and blue? (Marks: 10)

(ii) Ten coins are thrown simultaneously, find the probability of getting at least seven heads (Marks: 10)

4. Two kinds of manure were applied to 15 plots of equal size; other condition remaining the same. The yields (in quintals) are given below (Marks: 20)

Manure I	14	20	34	48	32	42	30	44
Manure II	31	18	22	28	40	26	45	

Examine the significance of the difference between the mean yields due to the application of different kind of manure

SECTION C

Short Notes (Select any Four Questions)

(Total Marks : 20, 5 Marks each)

- (i) What are the characteristics of good estimator?
- (ii) Explain the correlation and regression coefficient?
- (iii) What are the assumptions of Binomial & Poisson Probability Distribution
- (iv) Describe the advantages of non parametric tests.
- (v) Explain the Type of error I & II

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APPENDIX I

VALUES OF t FOR $P = 0.05$ AND $P = 0.01$

n'	$P = 0.05$	$P = 0.01$	n'	$P = 0.05$	$P = 0.01$
1	12.706	63.657	17	2.110	2.898
2	4.303	9.925	18	2.101	2.878
3	3.182	5.841	19	2.093	2.861
4	2.776	4.604	20	2.086	2.845
5	2.571	4.032	21	2.080	2.831
6	2.447	3.707	22	2.074	2.819
7	2.365	3.499	23	2.069	2.807
8	2.306	3.355	24	2.064	2.797
9	2.262	3.250	25	2.060	2.787
10	2.228	3.169	26	2.056	2.779
11	2.201	3.106	27	2.052	2.771
12	2.179	3.055	28	2.048	2.763
13	2.160	3.012	29	2.045	2.756
14	2.145	2.977	30	2.042	2.750
15	2.131	2.947			
16	2.120	2.921	∞	1.960	2.576