



**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION**

(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. AGRON. YEAR 2
- : B.Sc. ANI. SCI. YEAR 2
- : B. Sc. ANI. SCI. (DAIRY) 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
TITLE OF PAPER
TIME ALLOWED

- : **AEM202 & AEM201**
- : **ELEMENTARY STATISTICS**
- : **TWO (02) Hrs.**

INSTRUCTIONS

1. ANSWER **ALL** QUESTIONS IN **ALL** SECTIONS (A, B & C)
2. QUESTIONS CARRY MARKS AS INDICATED IN THIS PAPER.
3. USE ANSWER SHEET FOR **ALL** QUESTIONS.
4. USE A PEN

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

SECTION – A (Marks: 30)

A. Fill in the blanks (Only write the answers) [Total Marks: 10, 02 marks each]

- i. The most appropriate measure of dispersion is
- ii. Fill the correct missing value, Mode = (----- x Median + ----- Mode)
- iii. is/are affected by extreme observations in measures of central tendency.
- iv. In a normal distribution the Mean, Median and Mode are
- v. In a Poisson distribution the Mean and Variance are

B. Select and Write the correct answer [Total Marks: 20, 02 marks each]

1. If the mean of ten values is 70 and nine of the values are 48, 72, 79, 56, 45, 96, 88, 75 and 66 then the tenth value will be

- [a] 70 [b] 75 [c] 65 [d] 80 [e] None of these

3. Given the following eight observations 5, 10, 9, 7, 8, 6, 6 and 5, then the 5 is ----- of those observations?

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

4. The sum of the squares of deviations is the least when measured from

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

5. The Linear 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

6. A selection procedure of a sample having involvement of probability is known as

- [a]. Purposive sampling [b]. Judgement sampling [c]. Subjective sampling
[d]. Stratified sampling [e]. None of these

7. Which one is property of Binomial probability distribution?

- [a]. Probability p is large [b]. No. of trials are finite [c]. Mean \neq Variance
[d]. All of these [e]. None of these

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

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

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

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

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

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

SECTION- B (Total Marks: 40)

1. The marks of same 08 students in Statistics (X) and Mathematics (Y) are as follows.

| | | | | | | | | |
|---------------|----|----|----|----|----|----|----|----|
| Mathematics : | 65 | 66 | 67 | 67 | 68 | 69 | 70 | 72 |
| Statistics : | 67 | 68 | 65 | 68 | 72 | 72 | 69 | 71 |

[Marks: 10]

Average Marks of Mathematics is 68 and Average Marks of Statistics is 69. Calculate the correlation coefficient for proficiencies of these subjects Statistics and Mathematics.

2. A shop owner recorded the daily turnover in (E) of his outlet for 300 trading days shown in the frequency table given below

[Marks: 15]

| Daily Turn Over | 200-300 | 300-400 | 400-500 | 500-600 | 600-700 | 700-800 |
|-----------------|---------|---------|---------|---------|---------|---------|
| No. of Days | 23 | 20 | 45 | 87 | 75 | 50 |

a. Find out the average turnover and standard deviation of the shops by using change of origin and scale methods.

3.

(a) Mr. Masuku appears for an interview for two posts A1 and B1 for which selection is independent. The probability of his selection for post A1 is $(1/8)$ and for B1, it is $(1/12)$. Find the probability that Mr. Masuku is selected for both posts.

[Marks: 05]

(b) A finance committee of 6 people are to be selected from a group of 12 men and 9 women. If the selection is made randomly, find the chance that there are 4 men and 2 women selected in the financial committee.

[Marks: 10]

SECTION- C (Total Marks: 30)**1.**

From the following table showing the number of plants having certain characteristics, test the hypothesis that the flower color is independent from the shape of leaf. [Marks: 15]

| Flower Color | Flat leaves | Curled leaves | Totals |
|---------------|-------------|---------------|--------|
| White flowers | 95 | 40 | 135 |
| Red flowers | 20 | 05 | 25 |
| Total | 115 | 45 | 160 |

(Tabulated value of Chi-square is 3.84 at 5% level of significance)

2. Write short notes on the following

[Total Marks: 15, 05 marks each]

- (i) Describe the advantages of median over arithmetic mean
- (ii) Describe the Stratified Random Sampling.
- (iii) Describe the use of diagrammatical presentation.
