TECHNICAL UNIVERSITY OF MOMBASA

School of Humanities and Social Sciences

Department of HOSPITALITY & Tourism MANAGEMENT

UNIVERSITY EXAMINATION FOR THE DEGREE OF:

BACHELOR OF TECHNOLOGY IN HOTEL MANAGEMENT

(BTHM/SEP2022 & BTHM/AUG2021)

HHH 4405/HHH 4309: QUANTITATIVE TECHNIQUES/ STATISTICS FOR SOCIAL SCIENTISTS

END OF SEMESTER EXAMINATION

SERIES: APRIL 2025

TIME:2HOURS

DATE: Pick DateAPRIL 2025

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. AttemptChoose instruction.

Do not write on the question paper.

SECTION A (Answer all the questions) **30 POINTS**

QUESTION ONE

a) Describe FOUR Scale of measurement used in operationalizing variables in social science statistics (8 marks).

b) Distinguish between dependent and independent variables (2 marks)

c) Explain FIVE Hospitality and Tourism applications of regression analysis (10 marks).

d) Describe five sources of quantitative data (10 marks)

SECTION B (Answer only TWO questions)

QUESTION TWO

a) Describe the procedures for hypothesis testing in quantitative analysis (10 marks)

b) A researcher compared the performance of hotels (n=100) three destination areas (Coast, Nairobi and Western) in terms of annual percentage occupancy rate in 2024 and obtained the following results

ANOVA

Annual Occupancy (%)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4166.424	2	2083.212	13.649	.000
Within Groups	14805.225	97	152.631		
Total	18971.649	99			

(i) State the Null hypothesis for the test (2 marks)

(ii) Explain the results of the test (8 mark)

QUESTION THREE

a) Explain the concept –time series (2 marks)

b) Describe the three extrapolative time-series forecasting methods used in hospitality applications (6 marks)

c) Explain the components of tourism time series data (6 marks)

d) Explain three measures of time-series forecasting accuracy (6 marks)

QUESTION FOUR

a) Explain the assumptions that underpin the multiple regression analysis (10 marks);

b) The following results were obtained from an analysis of the association between performance of tourism as an export sector in 2018 and 2019:

Descriptive Statistics

	Mean	Std. Deviation	N
Export (%) of sales-2018	38.0030	13.84315	100
Export(%)of sales-2019	41.3870	15.15510	100

Correlations

		Export (%) of sales-2018	Export(%)of sales-2019
Export (%) of sales-2018	Pearson Correlation	1	.909**
	Sig. (2-tailed)		.000
	N	100	100
Export(%)of sales-2019	Pearson Correlation	.909**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

i. Describe the conducted test (2 marks).

ii. Discuss the direction of the association between the test variables (2 marks).

iii. Present the test results in the APA format (2 marks).

iv. Create a graphical representation of the test results (4 marks)

QUESTION FIVE

a) Using the following dataset

80	180	100	88	141	123	44	200
120	140	166	180	210	111	69	240

ii. What is the range of the set (2 marks)

i. Determine the interquartile range for the following set of numbers (2 marks)

iii. Compute the mode of the dataset (2 marks)

iv. Compute median (2 marks)

v. Compute the mean of the dataset (2 marks)

vi. Compute the standard deviation of the set (2 marks)

b) Using diagrams, sketch the following

i. Positive Skew (4 marks)

ii. Negative Skew (4 marks)