



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: JULY 2025

TIME: 2 HOURS

DATE: Pick Date Jul 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. Attempt Choose 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) Explain the sources of quantitative data in tourism research (10 marks)
- c) Describe three measure of central tendency used in describing tourism data (6 marks).
- d) Explain the concept correlation (2 marks)
- e) Distinguish between extrapolative and causal time series forecasting techniques (4marks)

SECTION B (Answer only TWO questions)

QUESTION TWO

- a) Using data provided below on from lunch sales at a restaurant on Monday, 29th April, 2022 compute

Table No.	1	2	3	4	5	6	7	8	9	10
Sale USD)	300	350	450	450	450	200	250	290	540	580

- Median price of meals sold (2 marks)
 - The Mean of sales (2 marks)
 - Mode of the lunch sales (2 marks)
 - The variance of sales (2 marks)
 - Standard Deviation of lunch sales (2 marks)
- b) Describe the generic procedure for hypothesis testing in inferential statistics (10 marks)

QUESTION THREE

- a) The following is an extract from a survey instrument developed to study political affiliation amongst the youth in Kisumu. Use the extract to answer the following questions (10 marks)

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1. How would you rate the importance of the following considerations in your choice of political party affiliation (Tick as appropriate)

Not very Important	Not important	Somewhat important	Important	Extremely Important	Consideration
☐	☐	☐	√	☐	Party ideology
☐	☐	☐	☐	☐	Party Leader's popularity
☐	☐	√	☐	☐	Advice from family and friends
☐	☐	☐	√	☐	Popularity of the party in my area
☐	☐	☐	√	☐	Party popularity in the country

- What is the scale of measurement used to operationalize the variables (2 marks?)
- What measures of central tendency can be computed from the quantitative data elicited in by this question? (2 marks)
- Illustrate how you would code the variables and their responses for data entry (3 marks)
- Using your proposed codes above, illustrate how you would capture the variables in the question on a datasheet

a) Illustrate using clearly labeled plots the distinctions between the following distributions

(i) Positive and Negative Skew (5 marks)

(ii) Platykurtic and Leptokurtic distribution (5 marks)

QUESTION FOUR

a) Explain the advantages of quantitative analysis (10 marks);

b) Tsavo-East national Park is divided into three administrative sectors, Sector Voi, Emusaya, & Ithumba. A researcher scientist surveyed the distribution of Black Rhinos in the park and observed the following results during an aerial survey.

Sector	Number of Black Rhinos Observed
Voi	18
Emusaya	17
Ithumba	26
Total	60

c) Was the researcher justified to assert that the population of Black Rhinos in the park was independent of the sectors? Show your working ($\alpha = .05$, $\chi^2_{crit} = 5.999$) (10 marks).

QUESTION FIVE

a) A research examine the relationship between number of beds, age, meal rating and percentage occupancy in hotels in Mombasa (n=100). The study obtained the following results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.670 ^a	.449	.432	10.43045	.449	26.127	3	96	.000

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8527.399	3	2842.466	26.127	.000 ^b
	Residual	10444.250	96	108.794		
	Total	18971.649	99			

a. Dependent Variable: Annual Occupancy (%)

b. Predictors: (Constant), Meals Quality Rating, Age in Years, Number of Beds

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33.950	3.941		8.614	.000
	Number of Beds	-.139	.019	-.593	-7.480	.000
	Age in Years	.074	.067	.086	1.095	.276
	Meals Quality Rating	4.106	.717	.438	5.724	.000

a. Dependent Variable: Annual Occupancy (%)

- What technique did the researcher use to examine the relationships? (2 marks)
- Comment on the Joint influence of the independent variables on the dependent variable (2 marks)
- Comment on the significance of the model (2 marks)
- To what extent did the explanatory variables explain variability in the explained variable? (2 marks)
- Comment on the relative influence of the explanatory variables on the explained variable (2 marks)
- Explain FIVE assumptions of the test (10 marks)