



PAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE, PLANNING AND CONSTRUCTION

QUALIFICATION: BACHELOR OF REGIONAL AND RURAL DEVELOPMENT	
QUALIFICATION CODE: 07BRAR	NQF LEVEL: 5
COURSE CODE: SRP520S	COURSE NAME: STATISTICS FOR REGIONAL PLANNERS
DATE: JANUARY 2025	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SUPPLEMENTARY/SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
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INSTRUCTIONS:
1. Answer ALL the questions. 2. Read all the questions carefully before answering. 3. Number the answers clearly and legibly. 4. The following materials are permissible during the examination: pen, pencil, ruler, eraser and calculator.

THIS QUESTION PAPER CONSISTS OF 5 PAGES (Including this front page)

Question 1

State whether the following statements are True or False

- a) Categorical variables are often called qualitative. (1)
- b) A variable is called not quantitative when the measurement scale has numerical values. (1)
- c) Interval scales have a specific numerical distance or interval between each pair of levels. (1)
- d) Discrete variables have a basic unit of measurement that cannot be subdivided. (1)
- e) Observation is not a preplanned research tool which is carried out purposefully to address research questions and objectives. (1)
- f) Interviews is a data collection method where an observer may study the subjective factors objectively. (1)

[6]

Question 2

- a) Define the term statistics. (2)
- b) What is the difference between descriptive and inferential statistics. (6)
- c) Identify and describe the three scales of measurement. (8)
- d) Identify and explain the methods in which observations can take place? (6)
- e) Describe statistical data (2)

[24]

Question 3

- a) What is a time series analysis? (2)
- b) List three reasons why we need a time series analysis. (6)

[8]

Question 4

- a) (i) Name the Namibian Institution mandated to produce quality statistics (1)
- (ii) State the legislative framework that guides them. (1)
- b) List the four main components of quality under the Namibia Quality Assurance Framework for Statistics. (4)

[6]

Question 5

The following table summarises the population data for a particular region.

Population/Land Area	Figures
Population in 2015	100,000
Population in 2014	92,500
Males aged 15-64 in 2015	28,000
Females aged 15-64 in 2015	30,300
Population less than 15 years in 2015	17,500
Population 65 years and older in 2015	24,200
Land area in 2015 (in square kilometres)	1,250

a) Calculate the following:

- (i) Annual population growth rate between 2014 and 2015 (3)
- (ii) Sex ratio for the population aged 15-64 in 2015 (3)
- (iii) Dependency ratio in 2015 (3)
- (iv) Population density in 2015 (3)

b) Interpret the calculations in (a) above. (4)**[16]****Question 6**

Suppose $P(A)$ represents the probability that a regional council in Namibia will promote business retention strategies in the 2025 financial year. If $P(A) = 0.72$, what is the probability that the regional council will not promote business retention strategies in the 2025 financial year?

[2]**Question 7**

The following show the number of professionally registered Namibian planners over various years: 20, 35, 45, 55, 50, 35 and 30. Calculate the following for the number of professionally registered Namibian planners:

- a) Mean (2)
- b) Median (2)
- c) Mode (1)
- d) Range (2)

[7]

Question 8

A survey estimates that the probability of planners promote community development is 0.55. Of the planners who promote community development, 75% also advocate the importance of regional planning. What is the probability that a randomly selected planner believes in both community development and regional planning?

[2]

Question 9

Let X represent the number of times a local authority has engaged in participatory planning recently. Assuming that the probability distribution of X is approximately: $P(0) = 0.15$, $P(1) = 0.30$, $P(2) = 0.20$, $P(3) = 0.10$ and $P(4) = 0.25$.

- a) Is X a discrete or a continuous variable? Please explain briefly. (2)
- b) Construct a table showing the probability distribution. (4)
- c) Find the mean of the probability distribution. (3)

[9]

Question 10

As a regional planner, you have the task of sampling from the 40,000 residents in a region to find out the percentage of inhabitants who believe the regional council should invest more in community development. Explain how you would proceed if you want a systematic random sample of 200 residents.

[2]

Question 11

The weights of a sample of five spatial planners are as follows: 100, 120, 90, 80 and 105. Calculate the following for the weights:

- a) Mean (3)
- b) Sample variance (4)
- c) Sample standard deviation (3)

[10]

Question 12

The following table shows the number of students pursuing regional and rural development in six different universities:

Universities	Number of Regional and Rural Development Students
University A	200
University B	310
University C	590
University D	150
University E	750
University F	400

- (a) Calculate the relative frequencies of the number of regional and rural development students. (4)
- (b) Construct a bar graph to illustrate the relative frequencies. (2)
- (c) Interpret the relative frequencies. (2)
- [8]**

TOTAL = 100