FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE, PLANNING AND CONSTRUCTION

QUALIFICATION: BACHELOR OF REGIONAL AND RURAL DEVELOPMENT	
QUALIFICATION CODE: 07BTAR	NQF LEVEL: 5
COURSE CODE: SRP520S	COURSE NAME: STATISTICS FOR REGIONAL PLANNERS
DATE: NOVEMBER 2024	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST 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

1.1. Select and write down the correct answers for the following:

(a) A/An .... scale of measurement has a natural ordering of values (1)
(i) Ordinal
(ii) Nominal
(iii) Interval
(iv) Ratio

(b) The following are Primary sources of data with the exception of: (1)
(i) Administrative data
(ii) Interview
(iii) Questionnaires
(iv) Observations

(c) Which of the following is not a classification of marital status? (1)
(i) Single
(ii) Double
(iii) Divorced
(iv) Widowed

(d) Statistics refers to: (1)
((i) Methods for designing, describing and making inferences.
(ii) Methods of obtaining and disposing data.
(iii) Pointing out development disparities across regions.
(iv) None of the above

**(e) In ...., data are analysed from a sample to make predictions about the larger
population of interest.** (1)
(i) Descriptive statistics
(ii) Inferential statistics
(iii) Composite indices
(iv) Time series data

1.2. State whether the following statements are True or False
(a)   Interval scales have a specific numerical distance or interval between each pair of levels. (1)
(b)   Discrete variables have a basic unit of measurement that can be subdivided. (1)
(c)   Quantitative variables are when the measurement scale has no numerical values. (1)
(d)   The main purpose of descriptive statistics is to reduce the data to simpler and more
        understandable forms without distorting or losing much information. (1)
(e)   We distinguish between categorical and quantitative variables because same statistical
        methods apply to each type. (1)

[10]

Question 2

(a)   What are composite indices?   (2)

(b)   Briefly outline 5 reasons why Planners need to study statistics.   (5)

(c)   (i) List two sources of data   (2)

          (ii) Explain each   source of data   (2)

          (iii) Give two examples source of data   (4)

(d)   Describe the advantages of interviews as a method of primary data collection.   (5)

                                                                                                                            [20]

Question 3

a)   What is demography?   (1)
b)   List the five aspects of human populations which constitute the focus of demography.   (5)
c)   **Distinguish between the following terms:**
         (i) Sex and gender   (2)
         (ii) Fecundity and fertility   (2)
         (iv) Mortality and life expectancy   (2)
         (v) Emigration and immigration.   (2)

                                                                                                                            [14]

Question 4

The following table summarises the demographic data for a certain region in 2018.

Demographic Details	Figures
Number of live births	12,500
Number of deaths	8,700
Average population	77,500
In-migration	6,000
Out-migration	5,500
Literate persons aged 15 years and above	52,00
All persons aged 15 years and above	60,0000

(a) Calculate the following: (You are expected to show your calculations)
  (i) Crude birth rate   (3)
  (ii) Crude death   (3)
  (iii) Net migration   (3)
  (iv) Literacy rate for the population aged 15 years and above.   (3)

(b) Interpret the calculations in **(a)** above.   (4)

[16]

Question 5

a)   Suppose P(A) represents the probability that a local authority in Namibia will allocate more resources to poverty alleviation programmes in the year 2025. If P(A) = 0.65, what is the probability that the local authority will not allocate more resources to poverty alleviation programmes in the year 2025?   (2)

b)   The following show the marks obtained by selected Namibian spatial planners in an aptitude test: 22, 68, 77, 33, 50, 60, 60, 55, 65 and 70. **Calculate the following for the marks:**
  (i) Mean   (2)
  (ii) Median   (2)
  (iii) Mode   (1)
  (iv) Range   (2)

[9]

Question 6

A survey estimates that the probability of the planning process serving the public interest is 0.74. For the planning processes which serve the public interest, 45% also promote private sector principles of efficient decision-making. What is the probability that a randomly selected planning process both serves the public interest and promotes private sector principles of efficient decision-making?

[2]

Question 7

Let **Y** represent the number of times planners have organized stakeholder consultations over the past year. Assuming that the probability distribution of **Y** is approximately: P(0) = 0.15, P(1) = 0.30, P(2) = 0.22, P(3) = 0.28 and P(4) = 0.05.

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

[9]

Question 8

As a development planner, you have the task of sampling from the 20,000 residents in a town to find out the percentage of inhabitants who believe the local council has been ineffective in providing affordable housing. Explain how you would proceed if you want a systematic random sample of 400 residents.   (2)

[2]

Question 9

The ages of a sample of five economic development planners are as follows: 25, 33, 40, 55 and 37.
Calculate the following for the ages:

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

[10]

Question 10

The following table shows the number of spatial planning graduates employed by various organizations:

Organisation	Number of Employed Spatial Planning Graduates
Organisation A	50
Organisation B	120
Organisation C	35
Organisation D	240
Organisation E	330
Organisation F	450

    a) Calculate the relative frequencies of the number of employed spatial planning graduates. (4)
    b) Construct a bar graph to illustrate the relative frequencies.   (2)
    c) Interpret the relative frequencies.   (2)

[8]

TOTAL = 100