JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

UNIVERSITY EXAMINATION 2018/2019

3rd YEAR 1ST SEMESTER UNIVERSITY EXAMINATION FOR THE DEGREE OF

BACHELOR OF SCIENCE IN COMMUNITY HEALTH AND DEVELOPMENT

KISII CAMPUS

COURSE CODE: PSP 3314

COURSE TITLE: SPATIAL DATA ANALYSIS IN PLANNING

EXAM VENUE: **STREAM: BED (ARTS)**

DATE

TIME: 2.00 HOURS   **EXAM SESSION………..**

INSTRUCTIONS:

1. **Candidates are advised not to write anything on this question paper.**

2. **Attempt question ONE and any other TWO.**

3. **Write all answers in the booklet provided.**

4. **Candidates must hand in their answer booklets to the invigilator while in the examination room.**

QUESTION ONE

a. What is spatial analysis? [3marks]

    i)   Discuss the four traditional types of spatial analysis [8marks]

    ii)   Differentiate between interpolation and contouring [4marks]

b. Describe the process used in drawing contour lines [5marks]

c. Describe various methods used in analyzing point interpolation [5marks]

d. Explain Kriging as a method of data interpolation [5marks]

QUESTION TWO

a) i. What is estimation [2marks]
   ii. Describe how estimation functions are performed in data analysis. [4marks]
   iii. State various uses of estimation process. [4marks]
   iv. Explain four features of a good estimator [8marks]

QUESTION THREE

a) Discuss the process of pattern analysis and spatial autocorrelation [10marks]

b) Explain by Newton's method of interpolation, the expectation of life at age 22 from the following data:

Age	10	15	20	25	30	35
Expectation of life (in years).	35.4	32	29.1	26.0	23.1	20.4

[10marks]

QUESTION FOUR

a) Describe the use of fractals in data presentation [8marks]

b) Define network analysis and calculate the **alpha index** for the region below. [12mks]
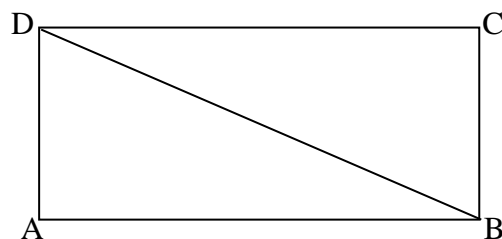
QUESTION FIVE

a) Discuss the process of spatial data management and spatial data analysis in organizational decision making [10marks]
b) Explain the use overlay operations in data analysis [10marks]