



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**SCHOOL OF HEALTH SCIENCES**

**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE**

**PUBLIC HEALTH/COMMUNITY HEALTH AND DEVELOPMENT**

**3<sup>rd</sup> YEAR 1<sup>ST</sup> SEMESTER 2018/2019 ACADEMIC YEAR**

**KISUMU CAMPUS**

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**COURSE CODE: PSP 3314**

**COURSE TITLE: SPATIAL DATA ANALYSIS**

**EXAM VENUE: STREAM: BSc Public/ Comm. Hlth & Dev**

**DATE: 24/4/19 EXAM SESSION: 12.00 – 2.00PM**

**TIME: 2.00 HOURS**

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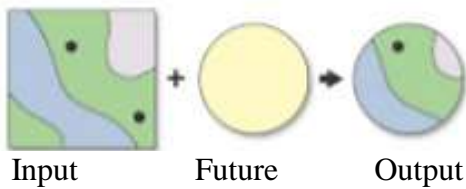
**Instructions:**

- 1. Answer all the questions in Section A and 2 questions in Section B.**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

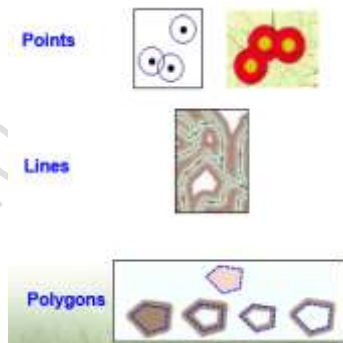
## SECTION A

Answer all the questions in Section A (30MARKS)

- a) Define the following
- i. Spatial Data Analysis (2mks)
  - ii. Geospatial Information System, GIS (2mks)
- b) At what stages of Spatial Data Analysis can data errors be introduced? (2mks)
- c) List three models of GIS data input. (3mks)
- d) Study the spatial overlays diagrams below and differentiate their use in spatial data analysis (4mks)



A



B

- e) Briefly describe any two types of map projections. (4mks)
- f) Explain two methods of spatial data acquisition (4mks)
- g) Why are elevation data used in Digital Elevation Model? (3mks)
- h) How can you digitize a map manually? (4mks)
- i) List four methods of Vector data input (4mks)

## SECTION B 40 (MARKS)

Answer any Two questions in this Section (Each Question 20 MKS).

### QUESTION TWO (20 MARKS)

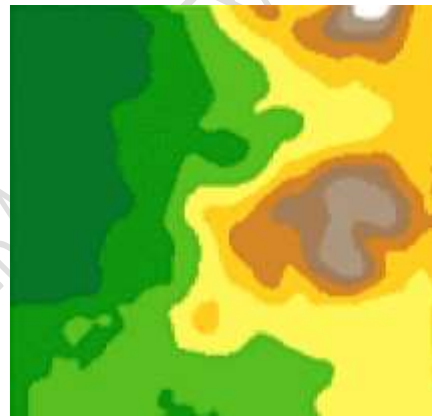
- Discuss four Spatial Analysis Methods (8mks)
- Highlight any two functions of digital processing and analysis. (4mks)
- Discuss the four concepts/process of GIS in summary (8mks)

### QUESTION THREE (20 MARKS)

- The diagram below shows spatial representation of Digital Elevation Model (DEM) in both software coding (A) and earth's surface (B). Explain how B is obtained from A (4mks)

156	200	250	291	250
120	136	213	277	270
119	198	267	305	261
105	162	207	210	214
98	109	158	180	189

A



B

- Describe the processes of Spatial Data Analysis (6mks)
- Spatial data can either be primary or secondary. Describe what the two sets mean and give examples in each. (10mks)

### QUESTION FOUR (20 MARKS)

- Discuss the two categories of image classifications. (6mks)
- What are the components of spatial references? (4mks)
- Describe any five angular parameters projection of satellite images. (10mks)

### QUESTION FIVE (20 MARKS)

- Discuss components of GIS (10mks)
- As a Community or Public Health officer, list four ways of how to apply Spatial Data Analysis in your profession (10mks)