



## **MASENO UNIVERSITY**

### **UNIVERSITY EXAMINATIONS 2015/2016**

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE  
OF BACHELOR OF SCIENCE IN GEOSPATIAL INFORMATION  
SCIENCE WITH INFORMATION TECHNOLOGY**

### **CITY CAMPUS - REGULAR**

**PGS 222: SPATIAL STATISTICS AND GEOSPATIAL ANALYSIS**

Date: 7<sup>th</sup> December, 2015

Time: 2.00 - 4.00 pm

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#### **INSTRUCTIONS:**

- Answer question ONE and any other TWO questions.



## PGS 222: SPATIAL STATISTICS AND GEOSPATIAL ANALYSIS

**INSTRUCTIONS: Answer question ONE, and any other TWO questions.**

- 1.a) Describe and discuss the various overlay functions in a GIS. (15 marks)
- b) Discuss the two models used in spatial data analysis. (15 marks)
2. Discuss topological errors associated with geographic features. (20 marks)
3. The County Government of Kisumu has contracted you as a GIS consultant to help them site a dam. Discuss the physical and socio-economic factors to consider. (20 marks)
4. With suitable illustrations, discuss the following techniques used in spatial statistics.
- i) Inverse distance (8 marks)
  - ii) Distance band (6 marks)
  - iii) Polygon contiguity (6 marks)
5. Discuss 5 areas where spatial statistics can be used to solve real life problems giving examples in each. (20 marks)
6. Write short notes on the following terminologies used in spatial statistics.
- i) Hotspot analysis (5 marks)
  - ii) Regression analysis (5 marks)
  - iii) Global vs. Local statistics (10marks)