



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

**SCHOOL OF HEALTH SCIENCES**

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

**PUBLIC HEALTH AND DEVELOPMENT**

**2<sup>nd</sup> YEAR 1<sup>ST</sup> SEMESTER 2021/2022 ACADEMIC YEAR**

**KISUMU CAMPUS**

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**COURSE CODE:**

**PPB 1207**

**COURSE TITLE:**

**GEOGRAPHICAL INFORMATION SYSTEM**

**EXAM VENUE:**

**STREAM: BSc Public Health and Development**

**DATE:**

**EXAM SESSION:**

**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 Geographic Information System (GIS) (2mks)
- b) What are the advantages of GIS? (3mks)
- c) List at least four sources of GIS data. (4mks)
- d) Using a sketch of a wave, differentiate between frequency and wavelength. (4mks)
- e) As a Public Health officer, list four applications of Geographic Information System in your profession. (4mks).
- f) Differentiate between vector and raster data models (2mks)
- g) Highlight two advantages and two disadvantages of vector and raster data models. (4mks)
- h) Differentiate between Passive Sensor and Active Sensor in remote sensing data acquisition. (4mks)
- i) State three ArcGIS software extensions. (3mks)

## SECTION B 40 (MARKS)

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

### QUESTION TWO (20 MARKS)

- a) Briefly discuss the five components of GIS. (10mks)
- b) Describe five factors considered to evaluate how good a GIS data is. (10mks)

### QUESTION THREE (20 MARKS)

- a) Highlight the advantages and disadvantages of satellite images. (6mks)
- b) What are the characteristics of Sensors-Platform concepts? (4mks)
- c) Describe the Remote Sensing process. (10mks)

### QUESTION FOUR (20 MARKS)

- a) Explain the major steps in GIS process. (8mks)
- b) Briefly discuss GIS Software components. (4mks)
- c) Data in remote sensing and GIS can either be primary or secondary. Giving examples in each case, explain this statement. (8mks)

### QUESTION FIVE (20 MARKS)

- a) Describe six broad applications of GIS (12marks)
- b) Describe four different ways Electromagnetic Energy Interact with the atmosphere (8marks)