



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENT & HEALTH SCIENCES

**UNIVERSITY EXAMINATION FOR:**

DEGREE IN MARINE RESOURCE

BSMR 15S/YEAR2/SEMESTER 1

EBC 4230: INTRODUCTION TO GIS AND REMOTE SENSING

END OF SEMESTER EXAMINATION

**SERIES:**AUGUST2017

**TIME:** 2HOURS

**DATE:**Pick DateSelect MonthPick Year

## **Instructions to Candidates**

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **TWO**Section(s). Attemptquestion ONE (Compulsory) and any other TWO questions.

**Circle the correct answer in section A.**

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## **QUESTION ONE (30 MARKS)**

- a) What is a Map (2mks)?
- b) Define the following features of a map (4mks)
  - i) Legend (1mk)
  - ii) Geographic coordinates (2mks)
  - iii) Attributes (1mk)
- c) Define data acquisition as a GIS function (2mks)
- d) What is data processing in GIS? (2mks)
- e) Briefly explain data analysis as a GIS function (2mks)
- f) Define data storage in GIS? (2mks)
- g) What is data output in GIS? (2mks)

- h) Differentiate between spatial and attribute data as used in GIS (4 mks)
- i) Explain the Difference between vector and raster data (4 mks)
- j) Briefly explain panchromatic images in remote sensing. (3mks)
- k) Briefly explain multispectral images in remote sensing. (3mks)

**QUESTION TWO (20 MARKS)**

Compare between photogrammetry and remote sensing.

**QUESTION THREE (20 MARKS)**

Discuss the following terms in Remote sensing.

- a) Spatial resolution (5 mks)
- b) Spectral resolution (5mks)
- c) Radiometric resolution (5mks)
- d) Temporal resolution (5mks)

**QUESTION FOUR (20 MARKS)**

GIS and remote sensing can be a very important tool for Marine managers. Discuss using examples how a marine manager can use GIS and remote sensing.

**QUESTION FIVE (20 MARKS)**

The following are coordinates of fish landing sites in Kenya.

- i) Convert the coordinates to decimal degrees. (15mks)
- ii) Arrange the landing sites from West to East (5mks)

Landing site	Longitude	Latitude
Nyari	39°36'33.57"E	4°13'16.76"S
Kipangani	39°54'28.48"E	3°33'12.13"S
Mkunguni	39°48'41.33"E	3°51'44.03"S
Vitanga Viwili	39°52'10.88"E	3°41'37.54"S
Kibuyuni	39°40'27.98"E	4° 5'4.39"S

