



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 211: REMOTE SENSING II

Date: 3rd December, 2015

Time: 9.00 - 11.00 am

INSTRUCTIONS:

- Answer question ONE and any other TWO questions.



PGS 211 REMOTE SENSING II

Instructions: Answer question one and any other two questions

- 1 .a) A digital image is a 2-D array of elements. Explain (2 marks)
 - b) Explain forms of image resolution. (8 marks)
 - c) Discuss image enhancement(6 marks)
 - d) Explain why visualization is important (4 marks)
 - e) Explain information and spectral classes in digital image classification (4 marks)
 - f) Explain three color spaces used to describe and define color in images (6 marks)
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- 2 .a) Using examples discuss the advantages of employing remote sensing technology for data collection (6 marks)
 - b) Discuss spatial, spectral and temporal forms of image pattern recognition (6 marks)
 - c) Give three reasons for reference data collection (3 marks)
 - d) Explain the concept of feature space (5 marks)
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- 3 a) Explain the visual elements used in visual image interpretation (10 marks)
 - b) Explain two approaches used in digital image classification (4 marks)
 - c) Explain sources of errors in image data (6 marks)
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- 4 a) Discuss Radiometric and geometric distortions of the scanner imagery. (10marks)
 - b) Discuss any three applications of remote sensing. (6 marks)
 - c) What is the difference between photographs and satellite images? Give an example and source of each. (4 marks)

- 5 a) Explain the five steps in digital image interpretation (10 marks)
- b) Discuss three modes of image display (6 marks)
- c) Discuss atmospheric conditions that affect the sensed radiance and how can they be removed in images (4 marks)
- 6 a) Discuss using examples how remote sensing can be used to monitor the rapid urbanization currently being experienced in Kenya (10 marks)
- b) Given the following data from an interpretation exercise, define the following and Compute their results. Show your work (10 marks)
- Users accuracy
 - Producers accuracy
 - Overall accuracy

Reference & Map Data	F	W	U	Row Total
f	28	14	15	
w	1	15	5	
u	1	1	20	
Column Total				

Key: Land Cover Categories

F= forest W=water U= urban