



MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2015/2016

**THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF ARTS IN URBAN & REGIONAL PLANNING WITH
INFORMATION TECHNOLOGY**

CITY CAMPUS - REGULAR

**PUR 323: APPLICATIONS IN GEOGRAPHIC INFORMATION
SYSTEMS**

Date: 2nd December, 2015

Time: 9.00 - 11.00 am

INSTRUCTIONS:

- Answer Question ONE and any other TWO Questions



PUR 323: APPLICATIONS IN GEOGRAPHIC INFORMATION SYSTEMS

Instructions: Answer question one and any other two questions

1. a) Define the following terms. (4 marks)
 - i. GIS
 - ii. Digitization
 - iii. Geo-database
 - iv. RDBMS
 - b) Discuss any two categories of GIS applications (4 marks)
 - c) Explain the classes of geo-databases.(4 marks)
 - d) Explain any Four types of spatial analysis that can be carried out in GIS (8 marks)
 - e) Explain key functions of GIS (8 marks)
 - f) Explain any TWO considerations in data acquisition (2 marks)
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- 2 a) Explain any five characteristics of DBMS (10 marks)
 - b) One of the key GIS implementation is whether to buy or build software from scratch, discuss the merits and demerits of both these alternatives (6 marks)
 - c) Explain the required tools to support GIS customization (4 marks)
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- 3 a) Explain the key components of a GIS (6 marks)
 - b) Describe the concept of spatial analysis and why is it important in GIS (4 marks)
 - c) Discuss the factors that has contributed to the faster growth of internet mapping (10 marks)

- 4 a) Using suitable sketches describe the client- server architecture of a GIS software system. (6 marks)
- b) Discuss the applications of GIS in the following areas (12 marks)
- i. Urban land use
 - ii. Fire control
 - iii. Forest analysis
 - iv. Roads and transport
- c) Data is considered the most expensive item in any GIS project, explain why? (2 marks)
- 5 a) Within the context of GIS, distinguish between analysis and modeling (6 marks)
- b) Using a suitable example, describe how GIS application can be used to solve practical optimum path problems (6 marks)
- c) Compare raster and vector data, List Two sources and advantages of each. (8 marks)
- 6 a) Using examples, Distinguish between queries and transformations (4 marks)
- b) Distinguish between the different types of model coupling in GIS (6 marks)
- c) Explain why customization of GIS software is necessary (4 marks)
- d) Explain any Three (3) techniques used in classifying data in GIS (6 marks)