



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF SPATIAL PLANNING
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF ARTS IN
SPATIAL PLANNING, BACHELOR OF SCIENCE IN WATER RESOURCE
MANAGEMENT AND ENVIRONMENTAL CONSERVATION, BACHELOR OF
SCIENCE IN PUBLIC HEALTH AND BACHELOR OF SCIENCE IN RENEWABLE
ENERGY
SEMESTER 2016/2017 ACADEMIC YEAR

CENTRE: MAIN AND KISUMU CAMPUS

COURSE CODE: PSP 3214

COURSE TITLE: GEOGRAPHIC INFORMATION SYSTEMS

EXAM VENUE:

STREAM: SPATIAL PLANNING

DATE:

EXAM SESSION:

TIME: 2 HOURS

Instructions:

- 1. Answer question 1 (compulsory) and ANY other 2 questions.**
- 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 (30 MARKS)

Answer ALL questions from this section

QUESTION 1

With reference to Geographical Information System (GIS):

- i) Define GIS [2 marks]
- ii) Explain the functions of GIS [10 marks]
- iii) Using suitable examples differentiate between point, line and polygon features [6 marks]
- iv) With the help of diagram, differentiate between raster and vector data structures [6 marks]
- v) Outline the polygon overlay spatial analysis with diagrams [6 marks]

SECTION B (40 MARKS)

Answer any TWO (2) questions from this section

QUESTION 2

As pertains GIS data capture and editing

- i) Define data capture [2 marks]
- ii) Discuss data capture process for field or analogue vector data [6 marks]
- iii) Outline possible sources of data for any GIS project. [6 marks]
- iv) State the advantages of using GPS as a source of data for a GIS [6 marks]

QUESTION 3:

Database often is basically a collection of information organized in such a way that that it can easily be accessed, managed, and updated. In respect to GIS database

- i) Outline the process of database development [5 marks]
- ii) Describe the constraints in relational database [5 marks]
- iii) Explain types of analysis that can be performed in the GIS database [10 marks]

QUESTION 4:

In respect to map production and coordinate reference system

- i) Distinguish between Geographic and Projected coordinates [4 marks]
- ii) Explain map elements in map production process [6 marks]
- iii) Discuss Universal Transverse Mercator (UTM) Coordinate Reference System [10 Marks]

QUESTION 5

- a) List possible GIS application areas in national development [5 marks]
- b) Explain possible spatial and attribute data about cholera outbreak in a country. [10 marks]
- c) Lists possible layers in a GIS project of an urban area. [5 marks]