



KANSAS ASSOCIATION OF MAPPERS
Study Guide for KGISD Examination



The exam is in two parts. The first part is a series of questions in various formats (true/false, multiple choice, short answer) and will take approximately two hours. The second part is a written GIS problem that will take approximately three hours. The parts are equal in value and you must pass each part in order to pass the exam.

The exam does not test specific software applications. The only supplies you can bring to the exam are pencils, erasers, and something to drink. There will be a 1-hour lunch break between the two parts.

The following is an outline that includes GIS concepts and knowledge that you will be tested on:

Basic Spatial Analysis Techniques

- Types of overlay and proximity analysis
- Components necessary for analysis
- Geocoding
- Location based spatial analysis – simple & complex

Queries

- Spatial Queries
- Attribute Queries
- SQL Queries
- Database Queries

GIS Principles

- Data Accuracy
- Components of a GIS
- Implementing a GIS
- Types of GIS
- Geographic Attributes
- Data Standards
- Editing

GIS Theory

- Topology
- GIS Uses
- GIS Management

GIS Terminology

- Be familiar with GIS and Cartographic terms

Cartography, Coordinate Systems, and Projections

- Map Scales
- Datum descriptions
- Projections (ex. Equal Area, Conformal)
- Cartographic Standards
- Coordinate Systems (ex. State Plane, UTM, Geographic)

Databases

- DBMS/RDBMS
- SQL (definition and uses)
- Relates/Joins

Data Types and Structures

- Raster (ex. Elevation DEM) and Vector (ex. Cadastral) data types
- Continuous and discrete data

Data Sources

- Data Issues
- Data Quality
- Sources of digital data

Data Collection and Creation

- Georeferencing
- Metadata
- Methods for data creation
- Relative and absolute accuracy
- Data conversion
- Digital orthophotos

Basics of Cadastral Mapping

- Metes and bounds legal descriptions (know about them)
- PLSS
- Coordinate Geometry

History of GIS

- GIS timeline
- Development of GIS

GPS Basics

- How GPS is used
- Triangulation

In order to complete the GIS problem (part II), knowledge of all areas listed above will be needed as well as some practical experience with project implementation and management.

Suggested Readings:

Geographic Information Systems and Science by Paul A. Longley, Michael F. Goodchild, David J. Maguire, David W. Rhind (Ed.), 2005.

Principles of Geographic Information Systems by Peter A. Burrough and Rachael A. McDonnell, 2004.

Cartography: Thematic Map Design by Borden D. Dent, Jeff Torguson, and Thomas Hodler, 2008.

Map Use: Reading and Analysis by Juliana O Muehrcke, A. Jon Kimerling, Aileen R Buckley, and Phillip C Muehrcke, 2009.

Also helpful:

IAAO 601 Course – Cadastral Mapping Methods and Applications.