

KATHMANDU UNIVERSITY
End Semester Examination
February, 2025

Level : B.E.
Year : II
Time : 2 hrs. 30mins.

20 FEB 2025

Course : GEOM 204
Semester : II
F. M. : 40

SECTION "B"

Attempt All questions. Assume the suitable value if necessary.

1. Explain the basic components of a GIS and their functions. [4]
2. Explain about problems that can be encountered while representing the geographic data. [2]
3. How do attribute data and spatial data differ in GIS? Provide examples of how each type of data is used in GIS analysis and decision-making. [1+2=3]
4. Outline the primary objectives of image compression. Explain the difference between lossless and lossy image compression techniques providing the examples of each. [1+3=4]
5. Explain the relationship between GIS and Cartography. [2]
6. Describe the raster and vector data models, highlighting their benefits and limitations. [4]
7. Elaborate on the importance of metadata in GIS. Discuss the key components that determine data quality based on U.S. Spatial Data Transfer Standard? [2+3=5]
8. You are tasked with determining the optimal location for a new retail store. You have access to various layers, such as population density, road networks, and competitor locations. Explain the GIS techniques you would use to identify the best location. [4]
9. You are given a dataset with geographic locations of hospitals and a population density map. Explain how you would perform a spatial analysis to find the areas with the highest need for new healthcare facilities. [4]
10. Write brief notes on the following: [4 × 2 = 8]
 - a. Analytical Hierarchical Process (AHP)
 - b. Resampling and its need
 - c. Universal Transverse Mercator (UTM)
 - d. Thiessen Polygon

