

Time: (2½ Hours)

[Total Marks: 75]

- N. B.: (1) All questions are compulsory.
(2) Make suitable assumptions wherever necessary and state the assumptions made.
(3) Answers to the same question must be written together.
(4) Numbers to the right indicate marks.
(5) Draw neat labeled diagrams wherever necessary.
(6) Use of Non-programmable calculators is allowed.

- Q.1 Attempt any three of the following: 15
a. What is GI System, GI Science and GIS applications?
b. Define Geographic Objects. Explain four parameters that define it.
c. Define Geographic field. Explain its different data type and values
d. Explain temporal dimension in brief with example.
e. What is topology? Explain spatial relationships with the help of suitable diagram.
f. Discuss the parameter used in topology and spatial relationship.
- Q.2 Attempt any three of the following: 15
a. Explain spatial Database querying with suitable example
b. Differentiate between vector data and raster data.
c. Explain the steps of linking GIS and DBMS.
d. Explain the relational data model using suitable example.
e. Write a note on spatial query analysis.
f. Explain Raster encoding with the help of example.
- Q.3 Attempt any three of the following: 15
a. Explain the Map projection with it's types with the help of diagrams
b. Explain Global Positioning System
c. Write short notes on i) Vectorization ii) Lineage
d. Explain with steps what is Data Preparation
e. What is Map Projection? List and explain types of Map Projections.
f. Explain 2D geographic coordinate system using suitable example.
- Q3e. Explain data preparation in brief.
- Q.4 Attempt any three of the following: 15
a. Explain various neighbourhood functions.
b. Write a note on vector overlay function.
c. What are the ways to classify the analytical functions of GIS?
d. Distinguish between primary and secondary data and give examples of each.
e. Explain using example how Raster overlay operation can be performed using decision table
f. Lists any five common sources of error introduced into GIS analyses
- Q.5 Attempt any three of the following: 15
a. What are Bertin's six categories of visual variables?
b. Describe the difference between a topographic map and a thematic map
c. Explain the visualization strategies in GIS.
d. Write short note on i) On screen map, ii) Multimedia map, iii) Static map.
e. Describe different techniques of cartographic output from the user's perspective.
f. Write a short note on Map Dissemination