

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**.

1. Attempt **any three** of the following:

15

- Write a short note on Regular and Irregular tessellations.
- Define Geographic phenomenon. What are geographic field and geographic object? Explain?
- Explain the temporal dimension using suitable example.
- What is geo-spatial data and geo-information?
- Explain the following terms:
 - Model
 - Database
 - Map
- Define GIS. Explain its four set of capabilities.

2. Attempt **any three** of the following:

15

- Write a short note on Relational Model & spatial database Querying.
- Explain the linking of GIS with Database.
- Discuss the latest Hardware and Software trends in Hardware and Software.
- Briefly Explain the four stages of spatial data handling.
- Explain GIS architecture and functionality using suitable diagram.
- What is DBMS? Explain any five reasons for using DBMS is GIS.

3. Attempt **any three** of the following:

15

- Explain the types of Accuracy
- Write a note on ellipsoid and Geoid reference model of the Earth Surface.
- What are the different classifications of Map Projections? Explain.
- Explain the following indirect spatial data capture technique:
 1. Digitization
 2. Vectorization
- Discuss about the errors in absolute positioning related to space segment.
- Explain the interpolating technique for continuous data Triangulation

4. Attempt any three of the following:

15

- a. Explain network analysis & its types.
- b. Write a note on neighborhood function.
- c. How error propagates in spatial data processing?
- d. List and explain the measurements on vector data.
- e. What is classification? Also explain user controlled and automatic classification.
- f. Describe raster overlay operation.

5. Attempt any three of the following:

15

- a. What do you mean by “HOW do I SAY, WHAT to WHOM and how is it EFFECTIVE”, in GIS? Explain.
- b. Describe visualization process using suitable diagram.
- c. Explain the different types of data.
- d. What are topographic and thematic maps? Explain.
- e. Explain using suitable diagram how to map terrain elevation and time series?
- f. Describe map dissemination in brief.