TY IT (Sem VI) / 4 IS / 1

Q. P. Code : 36144

(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 labelled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt *any three* of the following: **10**

a. Write a short not eon geospatial data.
b. List and explain various types of map projections.
c. Explain the data structure of a polygon coverage.
d. Explain any two types of raster data.

2. Attempt *any three* of the following: **10**

a. List and explain various data creation techniques.
b. Write a short note on data conversion.
c. Explain the map to map and image to map transformation.
d. List and explain different types of geometric transformation.

3. Attempt *any three* of the following: **10**

a. Explain various relationships between tables.
b. Explain the concept of normalization.
c. List and explain different types of map.
d. What is data classification? Explain.

4. Attempt *any three* of the following: **10**

a. Write a short note on attribute data query.
b. Explain descriptive statistics.
c. What is the output of the following for a statement (slope = 1) AND (NOT(Aspect=4)).

Aspect

4	1	4	1	2	3	1	2
4	1	3	2	3	2	2	4
3	2	4	4	4	3	4	3
3	3	1	2	1	2	1	3
2	4	2	3	2	1	2	2
1	2	3	1	3	4	3	3
3	3	1	3	4	3	4	4
4	4	2	2	4	4	2	1

Slope

1	1	1	3	4	2	3	3
3	2	1	3	4	4	1	4
3	2	2	1	2	3	2	3
4	3	3	2	3	4	4	4
3	4	4	3	4	2	3	2
2	2	1	2	4	1	2	4
2	1	3	3	4	4	1	1
1	3	3	2	2	3	4	1

d. What do you understand by spatial data query?

5. Attempt *any three* of the following: **10**

a. What is buffering? Write down the applications of buffering.
b. What do you mean by pattern analysis? Explain Nearest Neighboor analysis.
c. Write the purpose of the following map manipulation operations with example.
i. Erase ii. Update iii. Select iv. Eliminate V. Clip
d. What is local operation? Explain local operation with a single raster.

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6. **Attempt *any three* of the following:** 10

a. List and explain the elements of spatial interpolation.

b. Explain the Thin-Plate Splines local method.

c. What is spatial interpolation? What are spatial interpolation types? Explain any one type.

d. What is kriging? Explain universal kriging.

7. **Attempt *any three* of the following:** 15

a. Explain the following with example
   i. Association ii. Aggregation

b. Write the importance of control points in affine transformation.

c. Write a short note on map production.

d. Explain different types of graphs.

e. Explain the Density Estimation local method.

f. Explain the Thiessen Polygons local method.
