2007

REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEM

PAPER—VI (MOD-16 & 17)

Full Marks: 100

Time : 4 hours

The figures in the *right-hand* margin indicate *full* marks.

Candidates are required to give their answers in *their own words as far* as *practicable.*

Illustrate the answers *wherever necessary.*

Write the* answers** *of questions for 'each modules* ***in separate books.

Basic Concepts in GIS

MODULE 16• *(Full Marks : 601*

Group--A

Answer any *two* questions. 2x 15

1. What is topology ? Discuss the topology of point, line and polygon in vector data format. 5+10

2. What is TIN ? What is its importance in creating elevation data model ? Is TIN suitable to represent a continuous variation ? Justify your answer. 5+5+5

3. What are the advantages and disadvantages of raster and vector data structure ? 15

4. What are the different methods of manual and automatic digitization of analog data ? Briefly discuss the advantages and disadvantages of each method. 8+7

Group-B

Answer any *three* questions. 3x 10

5. Give a brief account of GIS modelling with examples. 10

6. Briefly describe the additional information which can be derived from Digital Elevation Model. 10

7. Give an account of various data compression techniques used to compress raster data. 10

8. Name the different data base structures to store GIS data. What are the advantages of RDBMS over other data structures ? 5+5

9. Write short notes on any two of the following : 2 X 5
   (a) Trend surface analysis.
   (b) Edge matching.
   (c) Buffering and its use.
   (d) Application of GIS in watershed modelling.

MODULE — *17 (Full Marks : 40)*

Group-A

Answer any- two questions. 2x 10

1. What is computer assisted cartography? How the present day technology revolutionized cartography? 3+7

2. What is map digitization ? Elucidate the different modes of map digitization. 3+7

3. What are the factors to be considered while designing a map? Give example of a landuse map layout. 5+5

4. Write short notes on any two : 2x5
   (a) Legibility.
   (b) Visual contrast.
   (c) Figure-Ground Organization.
   (d) Hierarchical Organization.

Group-B

Answer any *two* questions. 2x 10

5. What are the topological errors ? Why they are important in Geographical Information Systems ? 5+5

6. Note down the command of Arc Info used in correction of undershoot, overshoot, wrong arc direction, pseudonodes and label errors. 5x2

7. What is the importance of GIS and RS data integration ? Explain with examples. 10

8. Write short notes on any *two :* **2x5**

(a) **Line densification.**

(b) **Line smoothing.**

(c) **Douglas-Peucker algorithm.**

(d) **Reshape.**

(e) **Map joining (moraic).**