

TCE 605

PAPER ID-

Roll No. to be filled in your Answer Book

Roll No.

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B.Tech.**Civil Engineering, VI****Theory and Application of GIS & GPS (TCE 605)****Time- 3 Hours****Max marks: 100****NOTE:**

- i. All questions are compulsory.
- ii. Draw diagrams wherever necessary.
- iii. All questions carry equal marks.

1. Attempt any **FOUR** parts of the following.

5 X 4

- (A) Describe the term Spatial data Query? Write down the different ways of performing a query in the spatial interface.
- (B) Write down the difference between datums, geoid and ellipsoid with neat sketch.
- (C) Explain the advantages of GPS Survey over conventional surveying.
- (D) Explain any two of the following: (i) Topology in GIS (ii) Atmospheric window (iii) Satellite imagery.
- (E) Write a brief note on "Importance of Scale in GIS" with examples.
- (F) In what way GPS integration with GIS helps to improve the efficiency of mapping.

2. Attempt any **FOUR** parts of the following

5 X 4

- (A) Define Geographic Information System. What is the component of GIS?
- (B) Describe various errors that may occur in the digitisation of features in the context of GIS.
- (C) Explain the basic idea behind the working of GPS. Why is the fourth satellite needed to find exact coordinates?
- (D) Write a brief note on Indian Navigation System in terms of number and type of satellite and accuracy in positioning.
- (E) Explain the type of dataset used in GIS with one example each?

(F) Write down the difference between sun synchronous and geostationary satellites based on their orbital properties and applications (Write any five differences)?

3. Attempt any **TWO** parts of the following 10X2
- (A) Explain the difference between deterministic and statistical interpolation schemes?
 - (B) What is the principle of position fixing in GPS? Write down the factors affecting GPS observations along with their effect on accuracy.
 - (C) Discuss the plausible role of GIS in water resources projects with a case study.

4. Attempt any **TWO** parts of the following 10X2
- (A) Explain the following (Any Five) : (i) Georeferencing (ii) Rectification (iii) Geocoding (iv) DEM (v) Map Projection (vi) Database (vii) Latitude and Longitude
 - (B) Why is datum important in GIS? Describe the three types of map projections by their respective developable surface.
 - (C) Explain in detail about the application of GIS in Urban Planning?

5. Attempt any **TWO** parts of the following 10 X 2
- (A) What are the different compact Methods of Storing Raster Data?
 - (B) Write down the difference between vector and raster data along with their advantages and limitations.
 - (C) Define the term NAVSTAR GPS along with its advantageous. Explain the relative and differential positioning of GPS.
