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# P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

**Eighth Semester, B.E. - Civil Engineering**

**Semester End Examination; May / June - 2019**

**Geographic Information System**

Time: 3 hrs

Max. Marks: 100

*Note: Answer FIVE full questions, selecting ONE full question from each unit.*

## UNIT - I

1. Define GIS. Explain the working principles and need for GIS. Add a note on components. 20
2. Explain the term data of GIS. What are the types of data? 20

## UNIT - II

- 3 a. Define map projection with a neat diagram. Explain different types of map projection system. 10
- b. List out the advantages and disadvantages between RASTER and VECTOR data. 10
- 4 a. Explain use of digitizers and scanners of different types. 10
- b. Describe hierarchical network and relational database structure with illustrating sketches. 10

## UNIT - III

- 5 a. List and describe briefly various sources of data in GIS. 10
- b. Explain any two of the the following :
  - i) RASTER analysis
  - ii) Principles of spatial data access and search
  - iii) Land suitability evaluation
- 6 a. Write briefly the various sources of errors, their reliability. 10
- b. Define overlay and its methods. 10

## UNIT - IV

- 7 a. Explain the following :
  - i) Virtual GIS
  - ii) Remote sensing and GIS data integration
- b. Describe network analysis in GIS 10
8. Explain any two of the following :
  - i) Remote Sensing and its components
  - ii) Electromagnetic spectrum
  - iii) Reflection and Absorption

## UNIT - V

9. Write short note on;
  - i) Global Positioning System (GPS)
  - ii) Hyper spectral remote sensing
  - iii) Buffer zone Analysis
  - iv) GIS Software - Overview
- 10 a. Write short notes on;
  - i) Conceptual modelling
  - ii) Digital Image processing techniques
- b. What are the desirable characteristics of Database Management System? 10