Q.P.CODE:-TE0819214-I  (Pages: 2)  Name:…………..

Reg No: ………...

## SECOND SEMESTER M.TECH. DEGREE EXAMINATION MAY 2019

**Branch: Civil Engineering**  **Specialization: Transportation Engineering**

## 08CE6214  GIS AND ITS APPLICATIONS IN TRANSPORTATION ENGINEERING

**Time:3 hours**  **Max. marks: 60**

**Answer all six questions.**

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

| Q.no. | Module 1 | Marks |
|---|---|---|
| **1.a** Define the term "GIS". Name the different components of GIS | | **3** |
| | **Answer b or c** | |
| **b.** Which are the different types of Geo spatial data? Explain. | | **6** |
| **c.** Explain the different types of Cylindrical projections with neat sketches | | **6** |

| Q.no. | Module 2 | Marks |
|---|---|---|
| **2.a** Define the terms (i) Encapsulation (ii) Inheritance (iii) Polymorphism | | **3** |
| | **Answer b or c** | |
| **b.** Write a note on Georelational data model and object based data model | | **6** |
| **c.** Explain Raster data model. | | **6** |

| Q.no. | Module 3 | Marks |
|---|---|---|

**3.a** What do you mean by RMS Error — 3

**Answer b or c**

**b.** Explain the term " Geometric transformations " — 6

**c.** Explain attribute data input — 6

| Q.no. | Module 4 | Marks |
|---|---|---|

**4.a** What do you mean by the terms (i) Buffering (ii) Overlay — 3

**Answer b or c**

**b.** Explain data exploration techniques in GIS — 6

**c.** Explain Raster data analysis — 6

| Q.no. | Module 5 | Marks |
|---|---|---|

**5.a** Write down the different applications of GIS in Transportation planning — 4

**Answer b or c**

**b.** Explain applications of Aerial and Satellite imageries in transportation engineering — 8

**c.** Explain Intelligent information system for road accessibility study — 8

| Q.no. | Module 6 | Marks |
|---|---|---|

**6.a** Which are the different application of GIS in highway and traffic engineering — 4

**Answer b or c**

**b.** Explain GIS based traffic congestion analysis and accident investigation — 8

**c.** Explain the application of GIS in route optimization