APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY
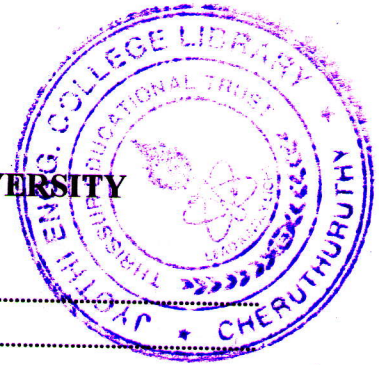## 08 PALAKKAD CLUSTER

Q. P. Code : TE0821214-I   (Pages: 2)

SECOND SEMESTER M.TECH. DEGREE EXAMINATION JULY 2021

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

08CE6214 GIS AND ITS APPLICATIONS IN TRANSPORTATION ENGINEERING

(Common to TE)

Time: 2 hour 15 minutes   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	List out the different applications of GIS?	3
	Answer b or c	
b	What are the differences between vector data and raster data?	6
c	Describe different types of map projections with neat sketches.	6

Q. No.	Module 2	Marks
2. a	Which are the different topology rules?	3
	Answer b or c	
b	Write a note on different types of Raster data models.	6
c	Give a detailed description on Georelational data model and object-based data model.	6

Q. No.	Module 3	Marks
3. a	What do you mean by RMS Error?	3

1

<div align="center">**Answer b or c**</div>

b	Explain the term "Geometric transformations".	6
c	Which are the various sources of errors, and how to assessment of GIS data quality?	6

Q. No.	Module 4	Marks
4. a	What do you mean by the terms (i) Slivers (ii) Pattern analysis	3

<div align="center">**Answer b or c**</div>

b	Elaborate the terms buffering, overlay, distance measurement with neat sketches.	6
c	Explain Raster data analysis.	6

Q. No.	Module 5	Marks
5. a	Write down the application of GIS in location of transport terminals and roadside facilities?	4

<div align="center">**Answer b or c**</div>

b	Discuss the applications of Aerial Photography and Satellite Imageries in transportation engineering.	8
c	Explain Intelligent Information System for roadside facilities and road accessibility study.	8

Q. No.	Module 6	Marks
6. a	Which are the different applications of GIS in utility management?	4

<div align="center">**Answer b or c**</div>

b	Explain GIS based highway alignment, GIS based road network planning.	8
c	Briefly explain GIS based traffic congestion analysis and accident investigation	8