Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APR / MAY 2025

B.E GEOINFORMATICS / B.E MINING ENGINEERING
4th Semester
CE23S01 - 3D Modelling using Terrain LIDAR System
(Regulation 2023)

Time: 1.5 hrs. Max. Marks: 50

PART- A (3 Marks x 10 =30 Marks)
(Answer all Questions)

Q. No.	Questions	Marks
1	Distinguish between vector and raster images with examples.	3
2	What are the different types of LiDAR systems?	3
3	Discuss the key features and applications of the USGS Earth Explorer platform.	3
4	Explain the main applications of the Polycam mobile application.	3
5	How distance is calculated using the Time-of-Flight (ToF) principle in LiDAR technology?	3
6	What is the primary function of the Decimate Modifier in Blender software?	3
7	Define the term 'path/row' in the context of satellite datasets.	3
8	Illustrate the advantages and limitations of terrestrial LiDAR systems.	3
9	Explain the term 'IMU'.	3
10	Write brief notes on the flight planning process for drones.	3

PART- B (5 Marks x 4 = 20 Marks)
(Answer any 4 Questions)

Q. No.	Questions	Marks
I.	Describe the principal components, system architecture, and operational principles of a terrestrial LiDAR system with neat sketches.	5
II.	Explain the working flow to import and process the point cloud data, and integrating CloudShare data within the QGIS environment.	5
III.	Explain the process of generating Digital Elevation Models (DEM) and Digital Surface Models (DSM) using both QGIS and CloudCompare platforms.	5
IV.	Explain the detailed procedure for integrating photogrammetric techniques into the Blender application.	5
V.	Describe the step-by-step procedure for generating 3D models using the Polycam mobile application.	5
VI.	Explain the procedure for constructing a mesh model using the RealityCapture platform.	5