GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2023

Subject Code:3142202   **Date:11-07-2023**
Subject Name:Mine Surveying - I
Time:10:30 AM TO 01:00 PM   **Total Marks:70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Discuss the basic definition and objectives of mine surveying.	**03**
	(b)	Explain closing error and its adjustment.	**04**
	(c)	List out different methods of measurement of horizontal angle. Explain repetition methods in brief.	**07**
Q.2	**(a)**	Define the term levelling. Discuss the objective of levelling.	**03**
	(b)	Define the traverse survey. Explain the systems of traversing with theodolite.	**04**
	(c)	Explain the general procedure for fieldwork in tacheometric surveying.	**07**
		OR	
	(c)	Explain the reduction of data with the help of a tacheometric table.	**07**
Q.3	**(a)**	Discuss the various methods of contouring.	**03**
	(b)	Explain the classification of surveying.	**04**
	(c)	Explain land surveying and instruments used in land surveying.	**07**
		OR	
Q.3	**(a)**	Discuss the characteristics of contours with the help of sketches.	**03**
	(b)	Describe the principles of surveying.	**04**
	(c)	Explain surveying measurements and errors.	**07**
Q.4	**(a)**	Explain the divisions and importance of surveying to engineers.	**03**
	(b)	Describe the temporary and permanent adjustment of theodolite. Explain how each of the adjustments is affected.	**04**
	(c)	List out different types of level. Explain dumpy level with neat sketch.	**07**
		OR	
Q.4	**(a)**	Explain the different types of theodolite.	**03**
	(b)	Discuss the main sources of errors in plane tabling. Explain how they can be kept to the minimum.	**04**
	(c)	Explain the instruments used in leveling.	**07**
Q.5	**(a)**	Define tacheometry. Describe the conditions under which tacheometric surveying is advantageous.	**03**
	(b)	Describe the classification of triangulation survey.	**04**
	(c)	Explain the measurement of area and volume by Trapezoidal and Simpson's rule.	**07**
		OR	
Q.5	**(a)**	Explain how you would determine the constants of a tacheometer.	**03**
	(b)	Describe the principle involved in a triangulation survey.	**04**
	(c)	Describe the construction, use, tests and adjustment of Miner's dial.	**07**