

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV EXAMINATION – SUMMER 2025

Subject Code:3142202

Date:12-05-2025

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) | Write the application of surveying in mining. | 03 |
| | (b) | What is theodolite? Write its types. | 04 |
| | (c) | List out the different types of level. Explain Dumpy Level with neat sketch. | 07 |
| Q.2 | (a) | Name the instruments are used in mine surveying. | 03 |
| | (b) | Discuss the principle and objectives of leveling. | 04 |
| | (c) | Discuss the miner's dial with its construction. Also write its uses in mining fields. | 07 |
| OR | | | |
| | (c) | Explain the reduction of data with the help of a tacheometry table. | 07 |
| Q.3 | (a) | Define the following term: Plans, Maps and Scales. | 03 |
| | (b) | Discuss the classification of triangulation survey. | 04 |
| | (c) | What do you mean by traversing? Describe the methods of traversing. | 07 |
| OR | | | |
| Q.3 | (a) | Write the different parts of theodolite. | 03 |
| | (b) | Narrate the merit and demerit of contouring. | 04 |
| | (c) | List out the different methods of measurement of horizontal angle. Explain repetition method. | 07 |
| Q.4 | (a) | Define land surveying. List out the instruments used in land surveying. | 03 |
| | (b) | Write a short note on Planimeter. | 04 |
| | (c) | Explain the profile levelling with neat sketch. | 07 |
| OR | | | |
| Q.4 | (a) | What is compass? Classified it. | 03 |
| | (b) | Explain omitted measurements and their calculations. | 04 |
| | (c) | Discuss the temporary adjustment of theodolite with neat sketch. | 07 |
| Q.5 | (a) | What is tacheometry surveying? | 03 |
| | (b) | Describe various methods of contouring. | 04 |
| | (c) | Write a brief note on plane table surveying. | 07 |
| OR | | | |
| Q.5 | (a) | Write the principles involved in a triangulation survey. | 03 |
| | (b) | Write a short note on closing error of traversing. | 04 |
| | (c) | Explain the stadia method with neat sketch. | 07 |

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2024****Subject Code:3142202****Date:18-07-2024****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) Describe the principles involved in a triangulation survey. **03**
 (b) Differentiate between tubular and through compass. **04**
 (c) Describe the construction, use, tests and adjustment of Miner's dial. **07**

- Q.2** (a) Explain the divisions and importance of surveying to engineers. **03**
 (b) Define the traverse survey. Explain the systems of traversing with theodolite. **04**
 (c) List out different methods of measurement of horizontal angle. Explain repetition methods in brief. **07**

OR

- (c) Explain the measurement of horizontal and vertical angles. **07**

- Q.3** (a) Describe the classification of triangulation survey. **03**
 (b) Explain closing error and its adjustment. **04**
 (c) Explain the reduction of data with the help of a tacheometric table. **07**

OR

- Q.3** (a) Define the term levelling. Discuss the objective of levelling. **03**
 (b) Explain omitted measurements and their calculations. **04**
 (c) Explain the general procedure for field work in tacheometric surveying. **07**

- Q.4** (a) Describe various methods of contouring. **03**
 (b) Explain the classification of surveying. **04**
 (c) Explain the main sources of errors in plane tabling. How can they be kept to the minimum? **07**

OR

- Q.4** (a) Describe with the help of sketches the characteristics of contours. **03**
 (b) Discuss in brief the principles of surveying. **04**
 (c) Explain the measurement of area and volume by Trapezoidal and Simpson's rule. **07**

03

- Q.5** (a) Define tacheometry. Describe the conditions under which tacheometric surveying is advantageous. **03**
 (b) Discuss about the temporary adjustment of theodolite. **04**
 (c) Explain the instruments used in leveling. **07**

OR

- Q.5** (a) Explain how you would determine the constants of a tacheometer. **03**
 (b) Discuss about the permanent adjustment of theodolite. **04**
 (c) List out different types of level. Explain dumpy level with neat sketch. **07**

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 |

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2022****Subject Code:3142202****Date:27-06-2022****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) What is Surveying? What are the instruments are used in it?	03
	(b) Write a short note on plane table surveying.	04
	(c) Explain the principles of surveying.	07
Q.2	(a) What is compass? Classified it.	03
	(b) Define the terms: (i) Vertical axis (ii) Telescope inverted (iii) Transiting (iv) Face left observation	04
	(c) Explain in detail with neat sketch : Reiteration method	07
	OR	
	(c) Explain in detail with neat sketch : Repetition method	07
Q.3	(a) Explain the temporary adjustments of a level.	03
	(b) Define the terms: (i) Horizontal plane (ii) Levelling (iii) Bench mark (iv) Mean sea level	04
	(c) Explain the profile levelling with neat sketch.	07
	OR	
Q.3	(a) Narrate the merit and demerit of contouring	03
	(b) Explain any one method of contouring.	04
	(c) The following staff readings were observed successively with a level, the instrument having been moved after third, sixth and eighth readings : 2.228, 1.606, 0.988, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684 meters. Enter the above readings in page of a level book and calculate the R.L. of points if the first reading was taken with a staff held on a bench mark of 432.384 meter.	07
Q.4	(a) What is tacheometry surveying? How is it helpful?	03
	(b) Write a short note on closing error of traversing.	04
	(c) Explain with neat sketch: characteristics of contour	07
	OR	
Q.4	(a) Draw various patterns of stadia diaphragm	03
	(b) Explain any one method of Interpolation of contour.	04
	(c) Explain the stadia method with neat sketch.	07
Q.5	(a) What are the uses of Planimeter?	03
	(b) Explain classification of Triangulation System.	04
	(c) How to measure a baseline? How to do the selection of site for it?	07
	OR	
Q.5	(a) Write a short note on Clinometer.	03
	(b) Explain: Trapezoidal rule	04
	(c) What is Miner's dial? Draw a neat sketch and explain its constructional feature in detail.	07
