

**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**

<b>Q.1</b>	(a) Write the application of surveying in mining.	<b>03</b>
	(b) What is theodolite? Write its types.	<b>04</b>
	(c) List out the different types of level. Explain Dumpy Level with neat sketch.	<b>07</b>
<b>Q.2</b>	(a) Name the instruments are used in mine surveying.	<b>03</b>
	(b) Discuss the principle and objectives of leveling.	<b>04</b>
	(c) Discuss the miner's dial with its construction. Also write its uses in mining fields.	<b>07</b>
	<b>OR</b>	
	(c) Explain the reduction of data with the help of a tacheometry table.	<b>07</b>
<b>Q.3</b>	(a) Define the following term: Plans, Maps and Scales.	<b>03</b>
	(b) Discuss the classification of triangulation survey.	<b>04</b>
	(c) What do you mean by traversing? Describe the methods of traversing.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Write the different parts of theodolite.	<b>03</b>
	(b) Narrate the merit and demerit of contouring.	<b>04</b>
	(c) List out the different methods of measurement of horizontal angle. Explain repetition method.	<b>07</b>
<b>Q.4</b>	(a) Define land surveying. List out the instruments used in land surveying.	<b>03</b>
	(b) Write a short note on Planimeter.	<b>04</b>
	(c) Explain the profile levelling with neat sketch.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) What is compass? Classified it.	<b>03</b>
	(b) Explain omitted measurements and their calculations.	<b>04</b>
	(c) Discuss the temporary adjustment of theodolite with neat sketch.	<b>07</b>
<b>Q.5</b>	(a) What is tacheometry surveying?	<b>03</b>
	(b) Describe various methods of contouring.	<b>04</b>
	(c) Write a brief note on plane table surveying.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Write the principles involved in a triangulation survey.	<b>03</b>
	(b) Write a short note on closing error of traversing.	<b>04</b>
	(c) Explain the stadia method with neat sketch.	<b>07</b>

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**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**

<b>Q.1</b>	(a) Describe the principles involved in a triangulation survey.	<b>03</b>
	(b) Differentiate between tubular and through compass.	<b>04</b>
	(c) Describe the construction, use, tests and adjustment of Miner's dial.	<b>07</b>
<b>Q.2</b>	(a) Explain the divisions and importance of surveying to engineers.	<b>03</b>
	(b) Define the traverse survey. Explain the systems of traversing with theodolite.	<b>04</b>
	(c) List out different methods of measurement of horizontal angle. Explain repetition methods in brief.	<b>07</b>

**OR**

<b>Q.3</b>	(c) Explain the measurement of horizontal and vertical angles.	<b>07</b>
<b>Q.3</b>	(a) Describe the classification of triangulation survey.	<b>03</b>
	(b) Explain closing error and its adjustment.	<b>04</b>

**OR**

<b>Q.3</b>	(a) Define the term levelling. Discuss the objective of levelling.	<b>03</b>
	(b) Explain omitted measurements and their calculations.	<b>04</b>
	(c) Explain the general procedure for field work in tacheometric surveying.	<b>07</b>
<b>Q.4</b>	(a) Describe various methods of contouring.	<b>03</b>
	(b) Explain the classification of surveying.	<b>04</b>
	(c) Explain the main sources of errors in plane tabling. How can they be kept to the minimum?	<b>07</b>

**OR**

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

**03**

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

**OR**

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

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**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.

		<b>Marks</b>
<b>Q.1</b>	(a) What is Surveying? What are the instruments are used in it? (b) Write a short note on plane table surveying. (c) Explain the principles of surveying.	<b>03</b> <b>04</b> <b>07</b>
<b>Q.2</b>	(a) What is compass? Classified it. (b) Define the terms: (i) Vertical axis (ii) Telescope inverted (iii) Transiting (iv) Face left observation (c) Explain in detail with neat sketch : Reiteration method	<b>03</b> <b>04</b> <b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(c) Explain in detail with neat sketch : Repetition method (a) Explain the temporary adjustments of a level. (b) Define the terms: (i) Horizontal plane (ii) Levelling (iii) Bench mark (iv) Mean sea level (c) Explain the profile levelling with neat sketch.	<b>07</b> <b>03</b> <b>04</b> <b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Narrate the merit and demerit of contouring (b) Explain any one method of contouring. (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.	<b>03</b> <b>04</b> <b>07</b>
<b>Q.4</b>	(a) What is tacheometry surveying? How is it helpful? (b) Write a short note on closing error of traversing. (c) Explain with neat sketch: characteristics of contour	<b>03</b> <b>04</b> <b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Draw various patterns of stadia diaphragm (b) Explain any one method of Interpolation of contour. (c) Explain the stadia method with neat sketch.	<b>03</b> <b>04</b> <b>07</b>
<b>Q.5</b>	(a) What are the uses of Planimeter? (b) Explain classification of Triangulation System. (c) How to measure a baseline? How to do the selection of site for it?	<b>03</b> <b>04</b> <b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Write a short note on Clinometer. (b) Explain: Trapezoidal rule (c) What is Miner's dial? Draw a neat sketch and explain its constructional feature in detail.	<b>03</b> <b>04</b> <b>07</b>

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