

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV(NEW) EXAMINATION – WINTER 2022****Subject Code:3142202****Date:14-12-2022****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) | Explain the divisions and importance of surveying to engineers. | 03 |
| (b) | Define the traverse survey. Explain the systems of traversing with theodolite. | 04 |
| (c) | Explain the main sources of errors in plane tabling. How can they be kept to the minimum? | 07 |

- Q.2**
- | | | |
|-----|---|-----------|
| (a) | Define the term levelling. Discuss the objective of levelling. | 03 |
| (b) | Differentiate between tubular and through compass. | 04 |
| (c) | Explain the measurement of area and volume by Trapezoidal and Simpson's rule. | 07 |

OR

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|-----|---|-----------|
| (c) | Describe the construction, use, tests and adjustment of Miner's dial. | 07 |
|-----|---|-----------|

- Q.3**
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|-----|---|-----------|
| (a) | Describe various methods of contouring. | 03 |
| (b) | Explain the classification of surveying. | 04 |
| (c) | List out different methods of measurement of horizontal angle. Explain repetition methods in brief. | 07 |

OR

- Q.3**
- | | | |
|-----|---|-----------|
| (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 horizontal and vertical angles. | 07 |

- Q.4**
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|-----|---|-----------|
| (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.4**
- | | | |
|-----|--|-----------|
| (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 |

- Q.5**
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|-----|--|-----------|
| (a) | Describe the principles involved in a 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.5**
- | | | |
|-----|---|-----------|
| (a) | Describe the classification of triangulation survey. | 03 |
| (b) | Explain omitted measurements and their calculations. | 04 |
| (c) | Explain the general procedure for field work in tacheometric surveying. | 07 |
