

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2021****Subject Code:3142202****Date:01/01/2022****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) Discuss the basic definition and objectives of mine surveying. | 03 |
| (b) Explain the instruments used in leveling. | 04 |
| (c) List out the different methods of measurement of horizontal angle. Explain repetition method. | 07 |
| Q.2 (a) Define tacheometry. Describe the conditions under which tacheometric surveying is advantageous. | 03 |
| (b) Define leveling. Discuss the principle and objectives of leveling. | 04 |
| (c) Explain the measurement of area and volume by Trapezoidal and Simpson's rule. | 07 |
| OR | |
| (c) Describe the construction, use, tests and adjustment of Miner's dial. | 07 |
| Q.3 (a) Explain the classification of surveying. | 03 |
| (b) Differentiate between tubular and through compass. | 04 |
| (c) List out different types of level. Explain Dumpy Level with neat sketch. | 07 |
| OR | |
| Q.3 (a) Define land surveying. List out the instruments used in land surveying. | 03 |
| (b) Explain surveying measurements and errors. | 04 |
| (c) Discuss various methods of interpolating the contours. | 07 |
| Q.4 (a) Discuss the use of planimeter. | 03 |
| (b) Explain the different parts of theodolite. | 04 |
| (c) Discuss about the temporary and permanent adjustment of theodolite. | 07 |
| OR | |
| Q.4 (a) Discuss the use of clinometer. | 03 |
| (b) Explain how you would determine the constants of a tacheometer. | 04 |
| (c) Explain omitted measurements and their calculations. | 07 |
| Q.5 (a) Describe the classification of triangulation survey. | 03 |
| (b) Describe with the help of sketches the characteristics of contours. | 04 |
| (c) Explain the reduction of data with the help of a tacheometric table. | 07 |
| OR | |
| Q.5 (a) Explain the divisions and importance of surveying to engineers. | 03 |
| (b) Discuss the principle involved in a triangulation survey. | 04 |
| (c) Explain the general procedure for field work in tacheometric surveying. | 07 |
