

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2023**

**Subject Code: 3152208**

**Date: 11-12-2023**

**Subject Name: Mine Surveying - II**

**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**

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|------------|--|-----------|
| <b>Q.1</b> | (a) Write the definitions with neat sketch. (i) Curve (ii) Simple curve (iii) Compound curve                             | <b>03</b> |
|            | (b) Narrate the necessary precautions and accuracy required in correlation survey?                                       | <b>04</b> |
|            | (c) Explain any one linear method to setting out simple curves with neat sketch.   | <b>07</b> |
| <b>Q.2</b> | (a) What is correlation survey? Why it is carried out in mine surveying?   | <b>03</b> |
|            | (b) Explain the terms with neat sketch: (i) External distance (ii) Deflection angle (iii) Forward tangent (iv) sub-chord | <b>04</b> |
|            | (c) Discuss the construction and various uses of Miner's Dial with neat sketch.  | <b>07</b> |
|            | <b>OR</b>  |           |
|            | (c) Explain any one method with a neat sketch of correlation survey.   | <b>07</b> |
| <b>Q.3</b> | (a) Define curve ranging. Explain direct and indirect method of curve ranging.   | <b>03</b> |
|            | (b) Write a short note on Clinometer.  | <b>04</b> |
|            | (c) Explain the rankine's method for circular curve.   | <b>07</b> |
|            | <b>OR</b>  |           |
| <b>Q.3</b> | (a) List out the instruments required during correlations survey.  | <b>03</b> |
|            | (b) Explain any one method of Stope surveying.   | <b>04</b> |
|            | (c) Explain the scale of vertical photographs in detail with neat sketch.  | <b>07</b> |
| <b>Q.4</b> | (a) Discuss the purpose of Stope surveying.  | <b>03</b> |
|            | (b) List out the items used in Photogrammetry.   | <b>04</b> |
|            | (c) Explain Principles and applicability of GPS and GIS in Surveying.  | <b>07</b> |
|            | <b>OR</b>  |           |
| <b>Q.4</b> | (a) Define photogrammetry with its advantages  | <b>03</b> |
|            | (b) Differentiate between photographs and map.   | <b>04</b> |
|            | (c) Explain the different types of mine models.  | <b>07</b> |
| <b>Q.5</b> | (a) Write a note on hanging compass.   | <b>03</b> |
|            | (b) Explain Remote sensing with principles and its applicability in mining.  | <b>04</b> |
|            | (c) Write the steps for preparation and preserve plan and section as per legal requirements.                             | <b>07</b> |
|            | <b>OR</b>  |           |
| <b>Q.5</b> | (a) Explain: Planimeter  | <b>03</b> |
|            | (b) List out merits and demerits of GPS.   | <b>04</b> |
|            | (c) Draw any seven convention symbol with detail used for the preparation of mine plans.                                 | <b>07</b> |

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