Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER- V EXAMINATION-SUMMER 2023

Subject Code: 3152208 Date: 27/06/2023

Subject Name: Mine Surveying II

Time: 02:30 PM TO 05:00 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 various types and uses of Curves.	**03**
	(b)	Differentiate between photographs and map.	**04**
	(c)	Discuss the construction and various uses of Miner's Dial with neat sketch.	**07**
Q.2	**(a)**	Define photogrammetry with its advantages.	**03**
	(b)	Define correlation survey. Enumerate the different methods of correlation of surface and underground surveys. What should be the accuracy in such surveys?	**04**
	(c)	Explain the setting out of curve by rankine method of tangential (deflection) angles.	**07**
		OR	
	(c)	Two tangents intersect at a chainage of 1250.50 m having deflection angle of 60^{o}. If the radius of the curve to be laid out is 375 m, calculate the Length of the curve, Tangent distance, Length of the long chord, Apex distance, Mid-ordinate, Degree of curve and Chainage of P.C. and P.T.	**07**
Q.3	**(a)**	Define curve ranging. Explain direct and indirect method of curve ranging.	**03**
	(b)	Discuss the various purposes of correlation surveying in mines.	**04**
	(c)	Describe approximate alignment method of correlation survey. Explain the precautions to be taken in work.	**07**
		OR	
Q.3	**(a)**	Explain designation of curve.	**03**
	(b)	Discuss the purpose of stope surveying.	**04**
	(c)	Explain the methods of stope surveying.	**07**
Q.4	**(a)**	Explain terrestrial photogrammetry. Describe the field work of terrestrial photogrammetry.	**03**
	(b)	Describe the various stages of aerial photogrammetry.	**04**
	(c)	Define tilt distortion. Discuss the advantages & disadvantages of photogrammetric mapping.	**07**
		OR	
Q.4	**(a)**	Explain aerial photogrammetry and its advantages.	**03**
	(b)	Discuss the application of photogrammetry in mining industry.	**04**
	(c)	Define aerial camera. Explain the various parts of aerial camera.	**07**
Q.5	**(a)**	Define remote sensing. Discuss the basic concepts and components of remote sensing.	**03**
	(b)	Discuss the applications of remote sensing in mining.	**04**
	(c)	Explain the basic concepts and principles of GIS & GPS.	**07**
		OR	
Q.5	**(a)**	Discuss the legal requirements about mine plans and sections.	**03**
	(b)	Explain the symbols used for preparation of mine plans and sections.	**04**
	(c)	Explain the different types of mine models.	**07**

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