GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–V (NEW) EXAMINATION – WINTER 2022

Subject Code:3152208   **Date:11-01-2023**
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
Q.1	**(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)	Explain the construction and various uses of Miner's Dial with neat sketch.	**07**
Q.2	**(a)**	Define correlation survey. Enumerate the different methods of correlation of surface and underground surveys. What should be the accuracy in such surveys?	**03**
	(b)	Differentiate between photographs and map.	**04**
	(c)	Explain the setting out of curve by successive bisection of chords.	**07**
		OR	
	(c)	Explain the setting out of curve by rankine method of tangential (deflection) angles.	**07**
Q.3	**(a)**	Describe the various stages of aerial photogrammetry.	**03**
	(b)	Explain the element of simple curve with neat sketch.	**04**
	(c)	Describe briefly the method of correlating surface and underground surveys when two shafts are available.	**07**
		OR	
Q.3	**(a)**	Define photogrammetry with its advantages.	**03**
	(b)	Discuss the various types of vertical curve.	**04**
	(c)	Explain the method of magnetic correlation for connecting the surface survey with the survey of underground workings of a mine. What are the drawbacks of these methods?	**07**
Q.4	**(a)**	Discuss the purpose of stope surveying.	**03**
	(b)	Explain the procedure of preparation and preservation of mine plans and sections.	**04**
	(c)	Explain the different types of mine models.	**07**
		OR	
Q.4	**(a)**	Discuss the legal requirements about mine plans and sections.	**03**
	(b)	Define tilt distortion. Discuss the advantages and disadvantages of photogrammetric mapping.	**04**
	(c)	Discuss the application of photogrammetry in mining industry.	**07**

Q.5 **(a)** Define remote sensing. Discuss the basic concepts and components of remote sensing. **03**

(b) Explain the basic functions and advantages of GIS. **04**

(c) Discuss the applications of GPS & GIS in mining industry. **07**

OR

Q.5 **(a)** Explain the basic concepts and principles of GPS. **03**

(b) Explain the visual image interpretation in remote sensing. **04**

(c) Discuss the applications of remote sensing in mining. **07**

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