Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER V • EXAMINATION – WINTER - 2012

Subject code: 152204 **Date: 16-01-2013**

Subject Name: Advance Mine Surveying

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.**

Q.1 **(a)** What is photogrammetric survey? Write a note on application and limitations of photogrammetric survey. **07**

(b) Write a note on planimeter and its uses. **07**

Q.2 **(a)** What are the legal requirements as to mine plans in India? **07**

(b) What are GIS and GPS? Give the application of GIS and GPS in surveying and computation. **07**

OR

(b) Write a note on measurement for the scale of a vertical photograph. **07**

Q.3 **(a)** Which instruments are required for stope surveying in underground mines? Explain the stope surveying in moderate inclination. **07**

(b) Write a note on methods of enlarging and reduction of plans. **07**

OR

Q.3 **(a)** Write a short note on uses of miner`s dial and hanging compass with clinometers and theodolite in stope surveying. **07**

(b) Explain various mine models. **07**

Q.4 **(a)** Explain the setting out of simple curves by chords and angles. **07**

(b) What is the correlation survey? Explain correlation by plumb lines in two shafts. **07**

OR

Q.4 **(a)** Explain correlation with gyro-theodolite. **07**

(b) Explain setting out of simple curves by Rankine`s method. **07**

Q.5 **(a)** A cross-measure drift rising at 1 in 2 passes through a seam of coal rising in the same direction at 1 in 6. If the thickness of the coal as measured along the roof of the drift is 17.5 meters, what is the true thickness of the seam? **07**

(b) Give the elements of compound curves. **07**

OR

Q.5 **(a)** The following observations were made in two roads AB and AC in a seam: **07**

Road	Bearing	Inclination
AB	N 27°30´ W	Rising 1 in 7
AC	S 85°36´ W	Rising 1 in 9

Calculate the direction and rate of full dip of the seam.

(b) A seam dipping at 1 in 4 in the direction S 30° W encounters a downthrow normal fault which runs in east-west direction. The vertical displacement of the fault is 50m and it hades at 30°. On the downthrow side of the fault the seam dips at 1 in 6 in the direction S 45°W. A stone drift dipping at 1 in 2 in the direction due south is to be driven from the upthrow side of the fault from a point 24m from the fault to touch the seam on the downthrow side. Calculate the length of the stone drift. **07**

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