Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER – VII • EXAMINATION – WINTER 2012

Subject code: 172205 **Date: 28/12/2012**

Subject Name: Rock Slope Engineering

Time: 10.30 am – 01.00 pm **Total Marks: 70**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Which geological parameters are used for the site reconnaissance and planning an investigation program to collect detailed design data for the rock cuts.	**07**
	(b)	Explain the affect of ground water flow in unstable slope design of rocks.	**07**
Q.2	**(a)**	Give Hoek-brown strength criteria for rock masses.	**07**
	(b)	Write down geometrical conditions for wedge failure and explain wedge failure analysis.	**07**
		OR	
	(b)	What is plane failure and explain mechanism of plane failure with illustrative diagram	**07**
Q.3	**(a)**	Write the different principles of rock slope engineering and explain any one.	**07**
	(b)	Explain pseudo-static stability analysis.	**07**
Q.3	**(a)**	Explain circular analysis with suitable examples.	**07**
	(b)	Explain load and resistance factor in design for rock slopes.	**07**
Q.4	**(a)**	Explain reinforcement with fully grouted untensioned dowels.	**07**
	(b)	Write a note on Bishop's and janbu's method for slices.	**07**
		OR	
Q.4	**(a)**	Explain importance of explosive properties and blast hole diameter for blasting in sloppy area.	**07**
Q.4	**(b)**	What is blast damage? Give the controlling measures for it.	**07**
Q.5	**(a)**	Explain sub-surface monitoring methods for rock slope movements.	**07**
	(b)	Explain geological investigation programme for porphyry deposits.	**07**
		OR	
Q.5	**(a)**	Explain surface monitoring methods for rock slope movements.	**07**
	(b)	Explain regressive and progressive movements of rock slope.	**07**

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