Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER 2013

Subject Code: 172205 **Date: 03-12-2013**

Subject Name: Rock Slope Engineering

Time: 10:30 TO 01:00 **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 production blasting? Which are the different parameters required for the optimum results of blasting? Explain any one.	**07**
	(b)	What is pre – reinforcement? List out different stabilization techniques by rock reinforcement. Write a short note on any one.	**07**
Q.2	**(a)**	Which precautions should be taken to avoid excessive back break with respect to production blasting? Explain pre – shearing and cushion blasting.	**07**
	(b)	Describe the various procedures for making surface measurements of slope movement.	**07**
		OR	
	(b)	Which methods are used in cases where, surface monitoring of slope movement is not feasible?	**07**
Q.3	**(a)**	Write a note on Buttresses – as a reinforcement method for stabilization of rock slope.	**07**
	(b)	Which are the different challenges for the slope designer to determine the characteristics of stability of rock slopes in open pit mine?	**07**
		OR	
Q.3	**(a)**	Write a note on Shotcrete.	**07**
	(b)	Explain the various slope design concepts and geo-hydrology in the case of stratigraphically controlled deposits of open pit coal mine.	**07**
Q.4	**(a)**	Give the general conditions for plane failure in a rock slope. Add a note on analysis of failure on a rough plane.	**07**
	(b)	Write a note on use of non-linear failure criterion in Bishop stability analysis.	**07**
		OR	
Q.4	**(a)**	Explain Newmark`s method of analyzing seismic effects on rock slopes.	**07**
	(b)	Explain comprehensive wedge analysis.	**07**
Q.5	**(a)**	Write a note on limit equilibrium analysis for the stability of rock slopes.	**07**
	(b)	Explain geophysical method for the site reconnaissance for mining method.	**07**
		OR	
Q.5	**(a)**	Explain the stages of complete investigation for the planning for the different slope design method.	**07**
	(b)	Explain ground water in rock slope.	**07**

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