Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – 7 SEMESTER– • EXAMINATION – SUMMER 2018

Subject Code:172205 **Date:28 -04-2018**

Subject Name: Rock Slope Engineering

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 pre – reinforcement? List out different stabilization techniques by rock reinforcement. Write a short note on any one.	**07**
	(b)	Which geological parameters are used for the site reconnaissance and planning an investigation program to collect detailed design data for the rock cuts.	**07**
Q.2	**(a)**	Discuss the basic principles of rock slope engineering for the open – pit mining slope stability. Add a note on Socioeconomic consequences of slope failures.	**07**
	(b)	Which geological parameters are used for the site reconnaissance and planning an investigation program to collect detailed design data for the rock cuts?	**07**
		OR	
	(b)	Explain the affect of ground water flow in unstable slope design of rocks.	**07**
Q.3	**(a)**	Give Hoek-brown strength criteria for rock masses.	**07**
	(b)	Which precautions should be taken to avoid excessive back break with respect to production blasting? Explain pre – shearing and cushion blasting.	**07**
		OR	
Q.3	**(a)**	Write a note on Buttresses – as a reinforcement method for stabilization of rock slope.	**07**
	(b)	Give the general conditions for plane failure in a rock slope. Add a note on analysis of failure on a rough plane.	**07**
Q.4	**(a)**	Write the different principles of rock slope engineering and explain any one.	**07**
	(b)	Explain load and resistance factor design method for rock slopes.	**07**
		OR	
Q.4	**(a)**	Explain reinforcement with fully grouted untensioned dowels.	**07**
	(b)	Write a note on limit equilibrium analysis for the stability of rock slopes.	**07**
Q.5		Write note on any two : 1. Ground water in rock slope. 2. Bishop's and janbu's method for slices. 3. Back analysis of slope failure. 4. Ground vibrations.	**14**

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