Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V EXAMINATION – WINTER 2015

Subject Code: 152203 **Date:08/12/2015**

Subject Name: Rock Mechanics

Time: 10:30am to 1:00pm **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 the application of rock mechanics in mining engineering?	**07**
	(b)	What is rock? Explain different properties of rock.	**07**
Q.2	**(a)**	Describe static and dynamic loading.	**07**
	(b)	Differentiate isotropic and anisotropic rocks.	**07**
		OR	
	(b)	Distinguish between stress and strain in rocks.	**07**
Q.3	**(a)**	What are the dynamic properties of rock?	**07**
	(b)	Explain the engineering properties of soil.	**07**
		OR	
Q.3	**(a)**	What are the elastic properties of rock and how rock strength is determined?	**07**
	(b)	What is creep deformation? Explain creep test.	**07**
Q.4	**(a)**	Explain the rock deformability under uniaxial compression.	**07**
	(b)	What is Slake durability index? Explain the working of Slake durability apparatus with figure.	**07**
		OR	
Q.4	**(a)**	Explain the physical properties of soil.	**07**
	(b)	Describe the methods of determining pre-mining stress in brief.	**07**
Q.5	**(a)**	Write note on Empirical criteria of rock fracture	**07**
	(b)	Write note on Permeability of rocks	**07**
		OR	
Q.5	**(a)**	Write note on Ground water flow in rock mass.	**07**
	(b)	Write note on Soil compaction and strength.	**07**

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