Seat No.: Enrolment No	
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## **GUJARAT TECHNOLOGICAL UNIVERSITY**

## **BE - SEMESTER-V • EXAMINATION - SUMMER • 2015**

	•	Code: 152203 Date: 11/05/201	5
Subject Name: Rock Mechanics.  Time: 02.30pm-05.00pm  Instructions:  Total Mark		: 70	
		Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
Q.1	(a) (b)	Draw and explain a generalized stress Vs strain curve for rock. Write a short note on application of rock mechanics in mining.	07 07
Q.2	(a) (b)	What are physical and mechanical properties of rock? How slake durability of rock is determined?  OR	07 07
	<b>(b)</b>	How permeability of rock can be determined in laboratory?	07
Q.3	(a) (b)	Briefly explain Anisotropic, Non-Elastic and Inhomogeneous property of Rock. Mention commonly used rock mass classification systems and briefly explains any one.	07 07
Q.3	(a) (b)	OR  Explain how to determine uniaxial compressive strength of rock in laboratory.  What are the static and dynamic methods for determining elastic constants of rock?	07 07
Q.4	(a) (b)	Explain how to determine shear strength of rock in laboratory?  Briefly describe creep behaviour of rock and estimation of creep deformation in mine working.	07 07
Q.4	(a) (b)	OR  Explain how to determine tensile strength of rock by indirect method.  Explain briefly Mohr-Coulomb rock failure criteria.	07 07
Q.5	(a)	What are the methods for determining in-situ stress state? Briefly explain any one such method.	07
	<b>(b)</b>	Explain briefly consistency and gradation of soil.  OR	07
Q.5	(a) (b)	Discuss the influence of water on engineered structures on or in the rocks. What do you understand by Rheology and rheological models explain any one model.	07 07

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