P. Pa Time	ges : 2 : Three H	Hours	GUG/W/16/38 * 3 9 9 4 * Max. Marks	6 <b>09</b> : 80
	Notes :	1. 2. 3. 4. 5.	All questions carry equal marks. Due credit will be given to neatness and adequate dimensions. Assume suitable data wherever necessary. Illustrate your answers wherever necessary with the help of neat sketches. Marks are indicated to the right.	
1.	Define :		16	
	i)	Linear & Non-linear Elasticity.		
	ii)	Joi	nt set & Joint spacing.	
	iii)	) Sec	cant Young's Modulus of Elasticity.	
	iv)	She	ear Loading as different from Compression & Tension.	
	v)	Yie	eld point.	
	vi)	Per	manent set.	
	vii	) Pri	ncipal stress. &	
	vii	i) Pre	-failure & Post-failure Behaviour.	
			OR	
2.	Define :			16
	i)	Tri	-axial Loading.	
	ii)	Res	sidual Strength.	
	iii)	) Joi	nts Vs. Faults.	
	iv)	Pro	portionality Limit.	
	v)	Tai	ngent Young's Modulus of Elasticity.	
	vi) Field Tests Vs. Laboratory Tests.			
	vii	) Asj	pect Ratio.	
	viii) Open Joint.			
3.	Enlist an Describe		by four important index tests used to assess different engineering properties of rocks. e any one index test of your choice.	16
			OR	
4.	W	What are the difficulties associated with direct tensile tests? Describe Brazilian Tensile Test <b>16</b> Method.		

**5.** Describe how

ii) shear strength of rock masses is determined in field.

## OR

- 6. What do you understand by dynamic elastic properties of rocks? What is the rationale for 16 studying dynamic properties? What are the different types of elastic waves through rocks? Describe Resonance method of determining dynamic properties.
- Does time span have any bearing on deformation behaviour of rock masses? What are 16 different stages of creep? How time-dependent properties of rocks are measured?

## OR

- 8. What are the benefits of engineering classification of rock masses? What do you understand 16 by single criterion rock mass classification schemes and multi-criteria rock mass classification schemes? Describe any two single criterion classification schemes.
- **9.** How do premises of Rock mechanics differ from those of soil mechanics? Discuss **16** important engineering properties of soils.

## OR

10. What is the concept of failure of rock masses? Explain Coulomb's criterion of failure of 16 rocks. Also state its limitations & drawbacks.

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