

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – WINTER • 2014****Subject Code: 152203****Date: 03-12-2014****Subject Name: Rock Mechanics****Time: 10:30 pm to 01:00 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) Define rock mechanics and also describe its application. **07**
(b) What is rock? Explain different properties of rock. **07**
- Q.2** (a) Explain the role of stress and strain in rocks. **07**
(b) Differentiate static and dynamic load on rocks. **07**
- OR**
- (b) What parameters affect the physical properties of rocks? **07**
- Q.3** (a) Explain the stress strain conditions in isotropic and anisotropic rocks. **07**
(b) What is hardness? Explain Moh's scale of hardness and role of hardness in rockmass. **07**
- OR**
- Q.3** (a) What role does porosity and permeability play in rock strength? **07**
(b) What is Slake durability index? Explain the working of Slake durability apparatus with figure. **07**
- Q.4** (a) Explain the rock deformability under uniaxial compression. **07**
(b) What is creep deformation? Explain creep test. **07**
- OR**
- Q.4** (a) Classify the properties of soil. **07**
(b) Evaluate the engineering properties of soil. **07**
- Q.5** Write note on any two : **14**
1. Hrdro-facturing method.
 2. Influence of eater on rock.
 3. Griffith criteria.
 4. Flat Jack Test.
 5. Rheology models.
