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**Sixth Semester B.E. Degree Examination, Dec.2018/Jan.2019**  
**Rock Mechanics**

Time: 3 hrs.

Max. Marks:100

**Note:** Answer any FIVE full questions, selecting atleast TWO questions from each part.

**PART – A**

- 1 a. Explain the scope, importance, development and application of Rock mechanics in Mining Industry. (14 Marks)
- b. Explain the Rock Mechanics contribution to Mining and Civil Industry. (06 Marks)
- 2 a. Explain the Mohr's circle of stress. (12 Marks)
- b. Explain the stress in planes. (08 Marks)
- 3 a. Explain the equation of compatibility. (10 Marks)
- b. Explain the stress – strain curves of various rocks. (10 Marks)
- 4 Write short notes on :
  - a. Determination of Density.
  - b. Porosity.
  - c. Degree of saturation.
  - d. Electrical and Thermal properties of rocks. (20 Marks)

**PART – B**

- 5 Write short notes on :
  - a. Determination of compressive strength.
  - b. Triaxial testing.
  - c. Protodya Kanov Strength Index.
  - d. Point load strength Index. (20 Marks)
- 6 Write short notes on :
  - a. Bore hole test.
  - b. Dilatometer test.
  - c. Hydraulic fractured and velocity propagation. (20 Marks)
- 7 a. Explain the Kelvin model. (10 Marks)
- b. Explain the Maxwell model. (10 Marks)
- 8 Explain the Instrumentation and Measurement of deformation. (20 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.