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Roll No

MVSE-301(E)**M.E./M.Tech., III Semester**

Examination, June 2017

Rock Mechanics and Foundation Engineering**(Elective-I)***Time : Three Hours**Maximum Marks : 70*

- Note:* i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Discuss the two dimensional rock stress measurement by over coring method. 7
b) Describe the procedure to determine unconfined compressive strength of intact rock. 7
2. a) Discuss the influence of environment and fluid (water) pressure on strength of rock. 7
b) Define the term "modulus of deformation of rock mass (E_{rm}) and give the relation with the intact modulus of rock (E_i). 7
3. a) Discuss the physical properties of chlorite schist. 7
b) Describe the influence of heterogeneities of rock on measurement of rock stresses. 7
4. a) Discuss the scope of rock mechanism in different engineering fields. www.rgpvonline.com 7
b) How to determine in-situ rock stress by hydraulic fracturing technique? 7

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5. a) Discuss the design parameters those are used in the design of rock slope. www.rgpvonline.com 7
b) Discuss the procedure to conduct a direct shear test on rock samples in the laboratory. 7
6. a) Discuss the design and modelling methodology used in rock engineering. 7
b) List the various index properties of intact rock. 7
7. a) Classify the various types of primary rocks as per geological origin. 7
b) How to determine magnitude of in-situ stress from drilled core samples by Deformation Rate Analysis (DRA). 7
8. a) Discuss the flat-jack technique for stress measurement of rock. 7
b) Discuss the factors which are affecting the seismic design of foundation on rock. www.rgpvonline.com 7

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