

Printed Pages : 3



CE-103

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 991103

Roll No.

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B. Tech.

(SEM. I) (ODD SEM.) THEORY
EXAMINATION, 2014-15
GEOLOGICAL SCIENCES

Time : 3 Hours]

[Total Marks : 80

Note: Attempt all sections.**SECTION - A****1** Attempt all questions in brief : **2×8=16**

- (a) Give the suitability of metamorphic rocks as engineering material.
- (b) Explain the causes of folds in rocks.
- (c) Define hardness of a mineral and discuss the Mohs' scale of hardness.
- (d) Describe lusture and discuss the terms used to define lusture of minerals.
- (e) What are the preventive measures of landslides?
- (f) Write about the current bedding.
- (g) What are the origins of ground water ?
- (h) Briefly describe the different methods for sub-surface structures.

SECTION - B

- 2** Attempt four of the following : **6×4=24**
- (a) Describe the structures of igneous rocks.
 - (b) Discuss and show the parts of a fault with the help of figure. Why faults are more dangerous than other geological structures from civil engineering point of view.
 - (c) Define joints in the rock masses. What are the causes of joints? What are the various types of joints found in the rock masses? Explain the significance of joints in civil engineering.
 - (d) What are the objectives of geological investigations? Explain the importance of geological investigation for tunnel construction.

SECTION - C

Note: Attempt all questions.

- 3** Attempt any two parts of the following : **5×2=10**
- (a) Describe the unconformity in the rock masses.
 - (b) What do you mean by the igneous rocks? Give the suitability of igneous rocks as engineering material.
 - (c) What do you mean by the fractures in the rock forming minerals? Describe the different terms used to describe fractures.
- 4** Attempt any two parts of the following : **5×2=10**
- (a) What is Puzzolana? How is it classified? Also mention the properties of puzzolana.

- (b) What do you mean by landslides? Give its causes and preventive measures.
 - (c) How do you distinguish the following pairs of minerals based on their physical properties?
 - (I) Quartz and Biotite.
 - (II) Muscovite and Augite.
- 5** Attempt any two parts of the following : **5×2=10**
- (a) How the folds are classified based on symmetrical character, upward or downward bend? Draw suitable sketches.
 - (b) For success, what is the role of strike and dip associating with sedimentary rock at dam site?
 - (c) Explain the following:
 - (I) Stratification
 - (II) Graded Bedding.
- 6** Attempt any one part of the following : **10×1=10**
- (a) What are the different methods for sub-surface structures? Describe the electrical resistivity method.
 - (b) Describe the classification of sedimentary rocks.
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