

III B.Tech. I Semester Supplementary Examinations, May -2005
ENGINEERING GEOLOGY
(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write short notes on
 - (a) Endogeneous and Exogeneous geological agents.
 - (b) Abrasion and attrition.
2. (a) Write short notes on the following:
 - i. Isomorphism and Pseudomorphism.
 - ii. Effect of Weathering and physical proportion of minerals.

(b) What are undesirable minerals from CIVIL Engineering point of view, why?
3. Describe the common structures/textures found in metamorphic rocks. Draw simple sketches.
4. "Shales, Schists and Limestones are in general unsuitable from civil engineering point of view" - Explain why?
5. Describe with illustrations the different **parts of faults**. Describe Horst Graben, step, bedding faults.
6. Write Short notes on:
 - (a) Vindhyan building stones
 - (b) Structure of Cuddapah basin
 - (c) Gondwana classification
7. Describe with a neat sketch the different types of sub-surface water? Briefly explain the terms 'Drawdown' and 'Cone of depression'.
8. Write Short Notes on :
 - (a) Different purposes of tunnels
 - (b) Tunnels faulted strata
 - (c) Tunnels in folded strata.

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1. (a) Differentiate between abrasion and attrition as applied to weathering of rocks.
(b) List different features of river erosion. Explain any two of them.
2. (a) What is meant by Mineral Fracture? Discuss the different types of fractures that are normally associated with minerals, giving suitable examples.
(b) Briefly discuss the physical properties of pyrite, Chlorite and Bauxite Mineral.
3. Give an account of different types of rocks among igneous, sedimentary and metamorphic groups which occur more frequently and abundantly in nature. Add a note on rock cycle.
4. Compare and contrast the following pairs of metamorphic rocks.
 - (a) Quartzite and Marble
 - (b) Gneiss and Schist
 - (c) Gneiss and Slate.
5. Describe with illustrations the different **parts of faults**. Describe Horst Grabeh, step, bedding faults.
6. (a) Write an essay about the Lithology, structure , fossil content and distribution of **Archaeans** in India .
(b) Write about the succesion and economic importance of Archaeah group.
7. Define the term Earthquake. Describe the different types of Seismic Waves, Describe isoseismals and coseismals
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1. (a) Define the following:
 - i. Base level of erosion
 - ii. Head ward erosion
- (b) Draw neat sketches of transverse profile and longitudinal profile of a river valley and explain them.
2. (a) What is meant by “ Hardness of Mineral”? How can it be determined? What is Mohs’ Scale of hardness.
- (b) Discuss the physical properties of Augite, and Talc.
3. Compare and contrast the following pairs of structures/textures:
 - (a) Foliation and Lineation
 - (b) Mural and Columnar joints
 - (c) Normal bedding and Cross bedding
 - (d) MUD CRACKS rain PRINTS.
4. Compare and contrast the following pairs.
 - (a) Laterite and Vesicular Basalt
 - (b) Charnockite and Khondalite
 - (c) Lamination and Lineation.
5. Compare the following and explain
 - (a) Open fold and closed fold
 - (b) Graben fault and Horst fault
 - (c) Tension joints and shear joints
 - (d) Younger formations and older formations.
6. (a) Write an essay on the **Geological time scale**.
- (b) Explain the principles of stratigraphy.
7. Write notes on :
 - (a) Terminology of earthquake

(b) Classification of landslide.

8. Explain the geological Causes for the Failure of Dams, with a few Case Histories.

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1. "The knowledge of geology is very essential at planning stage, design stage and construction stage of any Civil Engineering project". Justify this statement with a reference to a Dom site selection.
2. (a) What is meant by "Streak" in Mineralogy? How can it be determined? How does it help in identification of minerals.
(b) Discuss briefly the physical properties of Hematite, Graphite and pyrolusite Minerals.
3. Describe the common structures/textures found in metamorphic rocks. Draw simple sketches.
4. Compare and contrast the following pairs:
 - (a) Lava and Magma
 - (b) Sills and Dykes
 - (c) Plutonic and Volcanic rocks.
5. Distinguish between **faults and joints** with neat sketches. What are the precautions and steps to be taken to improve faults and jointed sites in the civil engineering operations.
6. (a) Write an essay on the **Geological time scale**.
(b) Explain the principles of stratigraphy.
7. Write an essay on Classification and Causes of Earthquakes? Describe the Civil Engineering Considerations in Seismic Areas with reference to building construction.
8. Write Short Notes on :
 - (a) Different purposes of tunnels
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