

III B.Tech I Semester Regular Examinations, November 2006
ENGINEERING GEOLOGY
(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

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 Dam site selection. [16]
2. (a) Define a Mineral?
(b) Enumerate the various Physical properties of Minerals. [2+14]
3. What is meant by metamorphism in rocks? Why it occurs? Add a note on metamorphic agents and major types of metamorphism. [2+2+6+6=16]
4. Explain why 'Granite' is an ideal rock from civil engineering point of view? [16]
5. Write short notes on the following with sketches.
 - (a) Fault Fold.
 - (b) Columnar joints
 - (c) Angular unconformity
 - (d) Radial faults [4x4=16]
6. Describe the **Vindhyan system** with reference to its distribution, succession stratigraphy and economic importance. [16]
7. Write notes on :
 - (a) Terminology of earthquake
 - (b) Classification of landslide. [8+8]
8. Write Short Notes on :
 - (a) Different purposes of tunnels
 - (b) Tunnels faulted strata
 - (c) Tunnels in folded strata. [5 $\frac{1}{3}$ x3=16]

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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 Dam site selection. [16]
2. (a) Discuss briefly on mode of formation of Minerals.
(b) Define the following:
 - i. Isomorphism
 - ii. Polymorphism
 - iii. Pseudomorphism. [7+9]
3. Write short notes on the following:
 - (a) Fossils
 - (b) Fault breccia
 - (c) Index minerals (metamorphism)
 - (d) Distinguishing the common types of cementing material in sandstones. [4x4=16]
4. Compare and contrast the following pairs:
 - (a) Lava and Magma
 - (b) Sills and Dykes
 - (c) Plutonic and Volcanic rocks. [5 $\frac{1}{3}$ x3=16]
5. Describe the various **types of folds** with neat sketches. [16]
6. (a) Write an essay on the **Geological time scale**.
(b) Explain the principles of stratigraphy. [8+8]
7. Describe the Groundwater Exploration? [16]
8. Explain the geological Causes for the Failure of Dams, with a few Case Histories. [16]

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1. Explain in detail the different types of River erosion. [16]
2. (a) Discuss briefly on mode of formation of Minerals.
(b) Define the following:
 - i. Isomorphism
 - ii. Polymorphism
 - iii. Pseudomorphism. [7+9]
3. Define a rock. How do you distinguish a rock from a mineral in hand specimen? Give an account of geological classification of rocks with suitable examples [2+4+10]
4. "Sand stones, Shales, Lime stones, Laterites and Conglomerate are the common sedimentary rocks found in nature". Discuss their suitability or otherwise at dam sites, reservoir sites and tunnel sites. [$3\frac{1}{5} \times 5 = 16$]
5. Write an essay on Different **types of faults** with neat sketches. [16]
6. Write Short notes on:
 - (a) Order of super position
 - (b) Physiography of peninsula.
 - (c) Shield area.
 - (d) Equivalents of cuddaph. [4x4=16]
7. Write short Notes on:
 - (a) Solifluction
 - (b) Debris Slide
 - (c) Creep
 - (d) Indirect Causes of Landslide. [4x4=16]
8. Write Short Notes on :
 - (a) Different purposes of tunnels
 - (b) Tunnels faulted strata
 - (c) Tunnels in folded strata. [$5\frac{1}{3} \times 3 = 16$]

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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 Dam site selection. [16]
2. (a) Write short notes on the following:
 - i. Isomorphism and Pseudomorphism. [2+2]
 - ii. Effect of Weathering on physical properties of minerals. [4](b) What are undesirable minerals from CIVIL Engineering point of view, why? [8]
3. Define a rock. How do you distinguish a rock from a mineral in hand specimen? Give an account of geological classification of rocks with suitable examples [2+4+10]
4. Compare and contrast the following pairs:
 - (a) Lava and Magma
 - (b) Sills and Dykes
 - (c) Plutonic and Volcanic rocks. [5 $\frac{1}{3}$ x 3 = 16]
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. [4 x 4 = 16]
6. Describe the **Vindhyan system** with reference to its distribution, succession, stratigraphy and economic importance. [16]
7. Write short Notes on:
 - (a) Solifluction
 - (b) Debris Slide
 - (c) Creep
 - (d) Indirect Causes of Landslide. [4 x 4 = 16]
8. What is Overbreak? And lining discuss the influencing geological factors. [4+12]
