

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

**PAPER ID : 0024****Roll No.**

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**B. Tech.**

(SEM. IV) THEORY EXAMINATION 2011-12

**ENGINEERING GEOLOGY***Time : 2 Hours**Total Marks : 50***Note :—**(1) Attempt *all* questions.

(2) Marks are shown in the margin against each question.

(3) Draw neat sketches wherever necessary.

1. Attempt any *four* parts of the following :— (4×3.5=14)

(a) Give the distinguishing Physical properties of the following minerals :—

(i) Hematite and Magnetite

(ii) Talc and Gypsum

(iii) Orthoclase Feldspar and Plagioclase Feldspar.

(b) Describe the various factors which control the strength of rocks. Discuss the suitability of the following rocks as construction material :—

(i) Marble

(ii) Granite

(iii) Quartzite.

(c) What are sedimentary rocks ? How are they classified ?  
Give a brief description of each class with example.

(d) Explain the following :—

- (i) Hardness
- (ii) Streak
- (iii) Fracture.

(e) Describe the important structures of metamorphic rocks.

(f) Explain Contour line, Strike line and Profile with neat sketches.

Attempt any *three* parts of the following :— (3×4=12)

(a) Draw and neat sketch of a fault and label its various parts. Discuss the various types of faults. Enumerate the significance of fault in Civil Engineering Works.

(b) Differentiate between the following :—

- (i) Symmetrical fold and Asymmetrical fold
- (ii) Dome and Basin
- (iii) Anticline fold and syncline fold.

(c) Discuss the following terms :—

- (i) Focus
- (ii) Epicenter
- (iii) Tsunamis
- (iv) Anti-centre.

(d) What do you understand by seismic zones of India

(e) How are earthquake classified ? Explain their cause.

Attempt any *two* parts of the following :— (2×6=12)

(a) What is Dam ? What are the uses of Dams ? Discuss the various aspects of geological investigation to be undertaken to select a site for Dams.

are the principles.

Describe the various methods. Explain its importance in Civil Engineering.

What do you understand by silting of reservoir? Discuss briefly how it can be checked.

Answer any *two* parts of the following :— (2×6=12)

What is ground water? Discuss its importance. Briefly describe the ground water provinces of India.

What are landslides? Discuss briefly their types, causes, and preventive measures.

Short notes on :—

- i) Alkali Aggregate reaction
- ii) Aquifer and Aquiclude
- iii) Bowen's reaction series.