

08/05/17 (11)

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**Question Paper Code : 71543**

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Third Semester

Civil Engineering

CE 6301 — ENGINEERING GEOLOGY

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Draw the internal structure of earth.
2. What is Exfoliation?
3. List the name of clay group of minerals.
4. Bring out the differences between muscovite and biotite.
5. How do you classify rocks? Give examples.
6. Differentiate between Gneiss and Schist.
7. Differentiate between True dip and apparent dip of rock formation.
8. What are joints and joint sets?
9. Define remote sensing.
10. List at least four measures to prevent coastal erosion.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the concept of plate tectonics and describe how earthquakes occur. Add a note on the distribution of earthquake in the world and in India.

Or

- (b) Illustrate and explain the erosion and depositional features formed by flow of river and add a note on the significance in civil engineering projects.

12. (a) List the physical properties of minerals and describe each property with examples from the mineral kingdom.

Or

- (b) Describe the composition, properties, varieties and uses of Gypsum, Quartz, and Feldspar.

13. (a) What are the engineering properties of rocks to be tested for constructions of dams and tunnels and how will you determine the engineering properties of rocks at site and laboratory?

Or

- (b) Write briefly about the classification of rocks? Describe the origin, texture, structure and occurrence of granite, dolerite, marble and sandstone rocks.

14. (a) Explain folding in rocks and describe the various types of folds.

Or

- (b) Explain how the geophysical methods help in knowing about sub-surface features during civil engineering investigations.

15. (a) What are landslides? How do they occur? Describe the types of landslides with a sketch and enumerate the geological investigation required for mitigation of landslides.

Or

- (b) Explain in detail the various causes and effects of sea erosion. Add a detailed note on coastal protection measures.

PART C — (1 × 15 = 15 marks)

16. (a) Using case study write a detailed account of the application of remote sensing in civil engineering?

Or

- (b) Write the geological considerations to be taken into account during tunneling.