

CIVIL

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Question Paper Code : 80193

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

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. Differentiate between Physical and chemical weathering.
2. Mention about the seismic zones of India.
3. Differentiate between colour and streak of minerals.
4. Differentiate between muscovite and biotite.
5. Write briefly about attrition test.
6. Compare the relative strengths of shale, sandstone and quartzite.
7. What are joints in rocks? How do they influence the strength of rocks?
8. What is meant by Wenner Configuration?
9. What is over break in tunnelling? How can it be controlled?
10. Mention a few coastal protection structures.

PART B — (5 × 13 = 65 marks)

11. (a) Using diagrams and explanations, describe the internal structure and composition of the Earth.

Or

- (b) Write in detail about the tectonic plates and their role in generation of earthquakes.

12. (a) Using appropriate examples from the mineral kingdom, describe the physical properties of minerals.

Or

- (b) Describe in detail, the properties, composition and uses of Feldspar and Calcite.

13. (a) Outline the various engineering properties of rocks, and give a detailed account of the laboratory and field tests to be carried out to estimate such properties.

Or

- (b) Write detailed notes on the mineral composition, texture, origin, engineering properties and uses of (i) Granite (ii) Dolerite, (iii) Sandstone and (iv) Marble.

14. (a) Write in detail about the types of faults and their influence on dams and tunnels.

Or

- (b) Discuss the operating principle of the seismic methods of subsurface investigation.

15. (a) What are the effects of the action of sea waves on the coastal zones? Add a note on the various coastal protection structures.

Or

- (b) List the causes of landslides. Also, classify landslides and give a detailed account of the methods of preventing them.

PART C — (1 × 15 = 15 marks)

16. (a) Using case studies of structural failures, discuss the importance of geological investigations for the design and construction of large civil structures.

Or

- (b) Natural disasters in India can be understood better and controlled well, if geology is understood well. Give your opinion about this statement using appropriate case studies.