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Question Paper Code : 40770

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

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. Define the term soil pedogenesis.
2. Explain in short the erosional landforms associated with ground water flow and depletion.
3. Define various varieties of quartz group of minerals.
4. Briefly, describe the important clay minerals and their use in modern industries.
5. Describe some distinguishing prime physical properties of the metamorphic rocks.
6. Explain briefly the term metamorphic facies and mineral paragenesis.
7. Describe the use of geological maps in understanding structural geology of a tectonically active area.
8. What are the different geological structures associated with convergent plate regimes ?
9. Differentiate between Arch and Gravity dams.
10. What are the various coastal protection structures ?

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PART – B

(5×13=65 Marks)

11. a) Explain in detail the internal composition of earth with emphasis on earth's upper mantle.

(OR)

- b) Discuss in detail the theory of plate tectonics. Provide some evidences that support this concept.

12. a) Discuss in detail the physical properties of feldspar and Pyroxene group of minerals.

(OR)

- b) List and explain various physical properties of Gypsum and Clay group of minerals with emphasis of their use in engineering aspects.

13. a) Describe how the mineral textures of an igneous rock be used to infer its origin.

(OR)

- b) What is a Dolerite ? Describe its composition, origin and distribution.

14. a) Write a detailed note on the mechanics and classification of folds and faults.

(OR)

- b) Explain in detail the principle, procedure and applicability of seismic methods for subsurface investigations.

15. a) Write a detailed note on the foundation evaluation techniques and influence of geological conditions on foundation and design of Dams.

(OR)

- b) Discuss the use of remote sensing applications in hydrogeological and mining investigations studies.

PART – C

(1×15=15 Marks)

16. Discuss the use of geospatial techniques for disaster management. Enumerate your answer with case studies on landslide mitigation adopted in the Himalayan region.