

**R13**

Code No: 115AA

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, November - 2015****ENGINEERING GEOLOGY****(Civil Engineering)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as such questions.

**PART – A (25 Marks)**

- 1.a) Define the term 'Erosion'. [2]
- b) Distinguish between physical geology and structural geology. [3]
- c) Describe the physical properties of minerals Streak. [2]
- d) Describe the Physical properties of minerals Cleavage. [3]
- e) Write short notes on Recumbent fold. [2]
- f) Define the term ground water. [3]
- g) Explain the Geophysical Magnetic method. [2]
- h) What is a dam? With what purpose it is built. [3]
- i) What are tunnels? [2]
- j) Explain the purpose of tunnels. [3]

**PART – B (50 Marks)**

- 2.a) How is Geology related to engineering? Discuss the scope and application of the geological knowledge in planning and execution of civil engineering works.
- b) Define weathering. Discuss three ways how rocks can be weathered mechanically. [5+5]

**OR**

3. Give different branches of Geology and their application to engineering. Discuss the importance of Geology in the field of Civil Engineering. [10]

- 4.a) Discuss different methods of study of minerals in brief.
- b) What are the metamorphic rocks?
- c) Explain mode of formation of Metamorphic rocks. [3+3+4]

**OR**

- 5.a) Describe the physical properties of minerals with suitable examples.
- b) Describe the classification of Sedimentary rocks.
- c) Describe the classification of igneous rocks. [4+3+3]

- 6.a) Define unconformity? Describe different types of unconformities.
- b) Describe the types of aquifers and fluctuation of the water table level in unconfined aquifers.
- c) Describe the types of water under the zone of aeration and zone of saturation. [4+3+3]

**OR**

- 7.a) Explain the parts and types of joints with suitable sketches.
- b) Explain the various geological, geophysical, hydrological methods.
- c) What is a perched water table? [4+3+3]

8. Write the capacity, evaporation, water tightening, lithology and influence of geological structure in connection with the life of Reservoir. [10]

**OR**

9. Describe the classification of geophysical methods of gravity, magnetic methods along with their importance in geological considerations. [10]

10. Explain the importance of geological structures for successful tunneling with sketches. [10]

**OR**

- 11.a) Write short notes on lining of tunnels.  
b) Write short notes on tunneling of rocks.  
c) Write short notes on Subsidence over old mines.

[3+4+3]

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