

III B. Tech I Semester Regular/Supplementary Examinations, October/November - 2016**ENGINEERING GEOLOGY**

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

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- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answering the question in **Part-A** is compulsory
 3. Answer any **THREE** Questions from **Part-B**
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PART -A

- | | | |
|---|--|------|
| 1 | a) Define the term geology and give their importance. | [3M] |
| | b) Write the physical properties of the Calcite group of minerals. | [4M] |
| | c) Explain the mechanism of folding? | [4M] |
| | d) What are the causes of Earthquake? | [4M] |
| | e) What is the importance of radiometric method? | [4M] |
| | f) What are the Effects of Tunnels? | [3M] |

PART -B

- | | | |
|---|---|-------|
| 2 | a) What is the scope of the Engineering Geology? | [4M] |
| | b) Explain the process of Weathering in Granite. | [8M] |
| | c) How to develop the valley? | [4M] |
| 3 | a) What is meant by Rock? | [3M] |
| | b) Describe the geological classification and give the characters of igneous rocks. | [8M] |
| | c) What are the types of Granite? | [5M] |
| 4 | a) What is meant by STRIKE, DIP and OUTCROP. | [7M] |
| | b) What are the parts of FAULTS and give their types with sketches. | [9M] |
| 5 | a) What is LAND SLIDES? What are the causes? | [6M] |
| | b) Explain the classification of Earth movements. | [10M] |
| 6 | a) Write the Principle of seismic method of prospecting. | [8M] |
| | b) Write the principle, parameters, methods and their applications of magnetic method. | [8M] |
| 7 | a) What are the purposes of Dams? | [6M] |
| | b) Explain the geological considerations for successful construction of dams in view of rocks, structures and ground water point of view with sketches. | [10M] |

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**PART -A**

- |   |    |                                                                         |      |
|---|----|-------------------------------------------------------------------------|------|
| 1 | a) | What are the branches of geology?                                       | [3M] |
|   | b) | Draw the Structures of metamorphic rocks.                               | [4M] |
|   | c) | What is Fault plane?                                                    | [3M] |
|   | d) | What are causes of Landslides?                                          | [4M] |
|   | e) | What is Well logging?                                                   | [4M] |
|   | f) | What kinds of rocks are suitable for constructions for tunnels? Explain | [4M] |

**PART -B**

- |   |    |                                                                                            |       |
|---|----|--------------------------------------------------------------------------------------------|-------|
| 2 | a) | Define the terms weathering, erosion.                                                      | [4M]  |
|   | b) | Explain the physical factors in the process of weathering.                                 | [8M]  |
|   | c) | What is the role of atmosphere in weathering?                                              | [4M]  |
| 3 | a) | Define the term mineral. What kind of material is called mineral?                          | [3M]  |
|   | b) | Write the importance of different physical properties in mineral identification.           | [8M]  |
|   | c) | What is importance of Garnet and give their physical properties.                           | [5M]  |
| 4 | a) | What are the parts of FOLDS?                                                               | [6M]  |
|   | b) | Draw the types of folds and give their mechanism with sketches.                            | [10M] |
| 5 | a) | Explain the terminology of Earthquakes.                                                    | [6M]  |
|   | b) | Explain the preventive measures for constructions of buildings in Earthquake prone areas.  | [10M] |
| 6 | a) | What are the branches of geophysics?                                                       | [8M]  |
|   | b) | Write the factors are influencing electrical Resistivity and give their, classification. . | [8M]  |
| 7 | a) | Explain the water tightness of the reservoir.                                              | [8M]  |
|   | b) | What are the associated rock types are influenced by Reservoirs. Explain with sketches.    | [8M]  |

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**PART -A**

- |      |                                                                         |      |
|------|-------------------------------------------------------------------------|------|
| 1 a) | What is structural geology? Give their importance in civil engineering. | [3M] |
| b)   | What are the structures of igneous rocks?                               | [4M] |
| c)   | Define the terms of parts of folds.                                     | [4M] |
| d)   | What are the types of soils under zone of saturation?                   | [4M] |
| e)   | What are the factors influencing seismic wave velocities?               | [4M] |
| f)   | Write about Lining of tunnels.                                          | [3M] |

**PART -B**

- |      |                                                                                             |      |
|------|---------------------------------------------------------------------------------------------|------|
| 2 a) | What are the geological agents? Explain.                                                    | [4M] |
| b)   | Explain the geological work of River Erosion, transport, deposition.                        | [8M] |
| c)   | Explain the stages of the development of the river.                                         | [4M] |
| 3 a) | What kind of minerals occurs abundantly on the surface of the earth?                        | [3M] |
| b)   | What are the various types of forms in minerals?                                            | [8M] |
| c)   | Explain the mode of formation of minerals.                                                  | [5M] |
| 4 a) | What are the parts of joints and give their classification.                                 | [8M] |
| b)   | What are the parts of unconformity? Give their classification.                              | [8M] |
| 5 a) | What is Water table? Give their types of water. Write about under zone of aeration.         | [8M] |
| b)   | Define the term porosity, permeability. Classify the rocks based on porosity, permeability. | [8M] |
| 6 a) | Write the importance of geophysical investigation                                           | [8M] |
| b)   | Enumerate the classification of geophysical methods.                                        | [8M] |
| 7 a) | What id Purposes of tunnels.                                                                | [7M] |
| b)   | Explain the influences of the associated geological structures for tunneling.               | [9M] |

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PART -A

- | | | | |
|---|----|--|------|
| 1 | a) | What is physical geology? Give their civil engineering importance. | [3M] |
| | b) | What are the structures of sedimentary rocks? | [4M] |
| | c) | Draw the open and closed folds. | [4M] |
| | d) | What are types of soils? | [4M] |
| | e) | What are principles of Exploration Geophysics? | [4M] |
| | f) | What is OVER BREAK? | [3M] |

PART -B

- | | | | |
|---|----|---|-------|
| 2 | a) | What are the allied branches? | [4M] |
| | b) | Explain the role of importance of geology in civil engineering. | [8M] |
| | c) | What are peninsular rivers? | [4M] |
| 3 | a) | Write the common rock forming minerals with examples. | [3M] |
| | b) | Write the physical properties, uses of the following minerals A. Microcline
Feldspar B.Amethyst. | [8M] |
| | c) | What is FRACTURE ? Give their types. | [5M] |
| 4 | a) | What is anticline, syncline? Give best examples in features on the earth. | [7M] |
| | b) | What are conformable beds? Explain the types of Conformity. | [9M] |
| 5 | a) | Write the controls of groundwater movement. | [6M] |
| | b) | What are the methods using for ground water Exploration techniques? | [10M] |
| 6 | a) | What are the branches of geophysics? | [8M] |
| | b) | Write the physical property, principle, parameters and equipments in Gravity methods. | [8M] |
| 7 | a) | What are the effects of tunnels? | [6M] |
| | b) | What is the influence of ground water conditions for successful tunnels? | [10M] |
