

III B. Tech I Semester Regular/Supplementary Examinations, March - 2021

ENGINEERING GEOLOGY

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answer **ALL** the question in **Part-A**
 3. Answer any **FOUR** Questions from **Part-B**
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PART -A**(14 Marks)**

1. a) Define Geology. Mention any four branches of geology. [2M]
- b) Explain Mohs scale of hardness. [2M]
- c) What is seismic belt? [2M]
- d) Define Strike and Dip. [3M]
- e) What is the purpose of Geological investigations? [3M]
- f) What are the conditions for lining of tunnels? [2M]

PART -B**(56 Marks)**

2. a) Explain various branches of geology. [7M]
- b) Explain various stages in the development of a river. [7M]
3. a) Explain different structures of igneous rocks. [7M]
- b) Describe the physical properties of Feldspar group of minerals. [7M]
4. a) Classify the various faults with neat sketches [7M]
- b) Describe the importance of folds. [7M]
5. a) What are landslides? What are their causes? [7M]
- b) Write the precautions taken while constructing engineering structure in earthquake prone zone. [7M]
6. a) What is geophysics? Describe the importance of electrical resistivity method in civil engineering. [7M]
- b) Write the geological methods adopted for the selection of dam sites. [7M]
7. a) What is tunnel? What are their advantages? [7M]
- b) Discuss geological considerations for a successful reservoir site. [7M]

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PART -A**(14 Marks)**

1. a) What is weathering and mention types of weathering? [2M]
- b) What is Luster? [2M]
- c) Enumerate types of faults. [2M]
- d) Explain Richter scale. [3M]
- e) Explain Seismic Methods. [3M]
- f) Explain purposes of Tunneling. [2M]

PART -B**(56 Marks)**

2. a) Explain various stages in the development of a river. [7M]
- b) Explain the different types of weathering. [7M]
3. a) Explain and compare the study of minerals by different methods. [7M]
- b) Write the physical properties of quartz and galena. [7M]
4. a) Explain the following: i) Angular unconformity ii) Mural joints. [7M]
- b) What is a Fault? What is their Effect in civil Engineering? [7M]
5. a) What are the causes of earth quakes? Describe them. [7M]
- b) What are the preventive measures for landslides? [7M]
6. a) Explain the principle of gravity method of exploration. [7M]
- b) What are the parameters of lithology of Electrical methods? [7M]
7. a) Briefly write about various types of dams. [7M]
- b) Describe the geological considerations in tunneling. [7M]

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1. a) What are OX-BOW lakes? [2M]
- b) Define a mineral. [2M]
- c) What is unconformity? [2M]
- d) What is cone of depression? [3M]
- e) Draw the diagram for electrical resistivity method. [3M]
- f) What is life of reservoir? [2M]

PART -B**(56 Marks)**

2. a) Explain the significance of geology in civil engineering. [7M]
- b) Describe the physical weathering of rocks. [7M]
3. a) Explain the role of physical properties in the identification of minerals. [7M]
- b) Compare the properties of: i) Quartz and Feldspar, ii) Calcite and Talc. [7M]
4. a) Explain the classification of folds with suitable sketches. [7M]
- b) List the types of unconformities. [7M]
5. a) Write a detailed note on the precautions to be taken for buildings in seismic areas. [7M]
- b) Explain the measures to be taken to prevent landslides. [7M]
6. a) Explain the different methods of Geophysical investigations. [7M]
- b) Explain the types of electrical resistivity methods. [7M]
7. What are the geological considerations for the selection of a dam site? Explain in detail. [14M]

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PART -A**(14 Marks)**

1. a) What is river piracy? [2M]
- b) Differentiate between intrusive and extrusive igneous rocks. [2M]
- c) What are types of folds? [2M]
- d) Explain Ground water Exploration techniques. [3M]
- e) Difference between Arch Dam and Buttress dam. [3M]
- f) Explain Rock Quality Designation. [2M]

PART -B**(56 Marks)**

2. a) What are deltas and how they are formed? [7M]
- b) Describe the importance of weathering with reference to dams, reservoirs and tunnels. [7M]
3. a) What is sedimentary rock? Describe classification of sedimentary rocks. [7M]
- b) Describe the physical properties of Feldspar group of minerals. [7M]
4. a) Explain the types of faults and thrust fault with case study. [7M]
- b) Explain about Tension joints and compressional joints. [7M]
5. a) Describe the causes and effects of earthquake. [7M]
- b) Explain the following: i) Mercali –Richter scale, ii) Epicenter and Focus. [7M]
6. a) Explain the electrical resistivity method. [7M]
- b) Describe the radiometric survey. [7M]
7. a) Define the term “Tunnel” and mention the purpose of tunnel. [7M]
- b) Describe the factors responsible for water tightness of reservoirs. [7M]
