

III B. Tech I Semester Regular/Supplementary Examinations, October/November - 2017

ENGINEERING GEOLOGY

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)2. Answering the question in **Part-A** is compulsory3. Answer any **THREE** Questions from **Part-B**
~~~~~**PART -A**

- 1 a) What is weathering? Explain biological weathering. [4M]
- b) Differentiate rock and mineral. [3M]
- c) Write the definitions for strike and dip with neat diagrams. [3M]
- d) Explain hydrological cycle. [4M]
- e) What are the uses of geological studies in civil engineering aspect? [4M]
- f) What is Dam? Write the parts of dam with neat sketch. [4M]

**PART -B**

- 2 a) What is geology? Explain about main and allied branches of geology. [10M]
- b) What are the reasons for failure of St' Francis DAM? [6M]
- 3 How sedimentary rocks are formed? Mention the important properties of sedimentary. [16M]
- 4 a) Explain the types faults and thrust fault with case study [8M]
- b) Explain about Tension joints and compressional joints. [8M]
- 5 a) What are the causes of earth quakes? [8M]
- b) What are the preventive measures for landslides? [8M]
- 6 Explain the seismic reaction method? What is the importance of this method in CIVIL engineering? [16M]
- 7 a) What are the geological considerations for successful reservoir? [8M]
- b) Explain over break of tunneling with reference to civil engineering. [8M]

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~~~~~**PART -A**

- 1 a) Draw the diagram of internal structure of earth. [3M]
- b) What is the difference between magma and lava? [4M]
- c) What are sheet joints and when are they formed? [4M]
- d) Give brief note about Granite. [3M]
- e) What are the advantages and limitations of geological investigations? [4M]
- f) What is an aquifer? [4M]

PART -B

- 2 What is weathering? Explain about Granite weathering? [16M]
- 3 Write the physical properties of following minerals [16M]
a. Mica b. Quartz c. Galena d. Albite
- 4 a) Write a brief notes about lime stone and marble and give their importance in civil engineering. [8M]
- b) Briefly explain about origin of igneous rocks? Explain the texture and structures of igneous rocks. [8M]
- 5 a) Explain cone of depression. [8M]
- b) Explain the causes of landslides. [8M]
- 6 What are the principle, physical properties, parameters and methods of radiometric method? [16M]
- 7 Briefly explain about water tightness and influencing factors of reservoirs. [16M]

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~~~~~**PART -A**

- 1 a) Explain exogenous geological agents. [3M]
- b) What are the physical properties for identification of minerals? [3M]
- c) With a neat diagram explain parts of faults. [4M]
- d) Explain the following:- **i.** Anticlinorium **ii.** Hosts and graben [4M]
- e) Explain about earth butters dam. [4M]
- f) Explain the methods of excavation. [4M]

**PART -B**

- 2 What are the physical, chemical and biological factors of weathering and explain? [16M]
- 3 a) What are the physical properties of the following minerals? [6M]  
**i.** calcite **ii.** Talc **iii.** Hematite
- b) Explain the following: [10M]  
**i.** Stalactites and stalagmites **ii.** Common textures of metamorphic rocks
- 4 What is fold? Give brief classification of folds. And also explain mechanism of folds with sketches. [16M]
- 5 Explain  
a) Importance of landslides [5M]  
b) Locating the epicenter of an earthquake [5M]  
c) Geological considerations in the selection of a dam site. [6M]
- 6 Explain the following with neat sketches  
a) Ground water table [8M]  
b) Types of Aquifer [8M]
- 7 What are the purposes of tunneling? Explain effects of tunneling on the ground. [16M]

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~~~~~**PART -A**

- 1 a) Explain endogenous geological agents? [4M]
- b) Write the Moh's Hardness table. [3M]
- c) What is the difference between porosity and permeability? [3M]
- d) What is joint? Explain parts of joints with neat sketches. [4M]
- e) What are the physical properties of igneous rocks? [4M]
- f) Describe the general principles involved in geophysical investigations. [4M]

PART -B

- 2 a) What are the geological agents? Explain about geological agents. [8M]
- b) Explain about River deposition and explain importance of study of rivers in Civil engineering. [8M]
- 3 a) Definition of mineral and what are the physical properties of identification of a mineral with examples? [8M]
- b) Write about Igneous rocks textures and structures. [4M]
- c) Distinguish between granite and quartzite. [4M]
- 4 What is fault? Give brief classification of faults with neat sketches. [16M]
- 5 a) Define the terms porosity and permeability. [8M]
- b) Explain the classification of rocks based on porosity and permeability. [8M]
- 6 Explain the Electrical Resistivity method. [16M]
- 7 a) What are the types of dams with sketches? [8M]
- b) Explain the Folds at the tunnel site with neat sketches. [8M]
