

**B.TECH
(SEM IV) THEORY EXAMINATION 2017-18
ENGINEERING GEOLOGY**

*Time: 3 Hours**Total Marks: 100***Note:** 1. Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief. 2 x 10 = 20**

- a. What are Metamorphic Rocks? How are they formed?
- b. Describe the physical properties of galena.
- c. Differentiate between colour and luster
- d. Describe the various factors which control the strength of rocks.
- e. Discuss the importance of metamorphic rock.
- f. Discuss the suitability of rock with marble as construction material.
- g. Explain faults in brief.
- h. Explain the structure of igneous rock
- i. Differentiate between density and specific gravity.
- j. Explain the term tenacity.

SECTION B**2. Attempt any three of the following: 10 x 3 = 30**

- a. Describe the texture and structure of metamorphic rocks with examples.
- b. Describe with neat sketches the primary structures of sedimentary rocks..
- c. Draw sketch of a fold and label its various parts. Describe different types of folds. How folds are recognized in the geological map? Explain effects of folding in relation to various Civil Engineering works.
- d. Distinguish between joints and faults. Discuss the effect of faulting on various engineering projects
- e. What is an earthquake? Describe the earthquake waves and their characteristics. Describe effects of earthquakes on man made structure.

SECTION C**3. Attempt any one part of the following: 10 x 1 = 10**

- (a) Describe the causes of earthquakes. How are earthquakes detected and recorded.
- (b) Explain Earthquake magnitude, Earthquake Intensity, Earthquake Focus and Earthquake epicenter.

4. Attempt any one part of the following: 10 x 1 = 10

- (a) What are tunnels and discuss its purpose and designing in details.
- (b) What are the principles of geophysical exploration? Discuss any one method used for interpreting subsurface structures. Explain its importance in Civil Engineering.

- 5. Attempt any *one* part of the following: **10 x 1 = 10****
- (a) Give a broad account of geological conditions that influence the stability of a road cut.
 - (b) Discuss in detail factors responsible for occurrences of landslides.
- 6. Attempt any *one* part of the following: **10 x 1 = 10****
- (a) Discuss the properties and industrial use of hematite and galena in detail.
 - (b) Explain in detail rock cycle.
- 7. Attempt any *one* part of the following: **10 x 1 = 10****
- (a) Write in detail groundwater hazards and its causes.
 - (b) What is ground water? Discuss the properties which control water bearing capacity of the Igneous, Sedimentary and Metamorphic rocks