

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

June, 2017

00767

BICE-003 : ENGINEERING GEOLOGY

Time : 3 hours

Maximum Marks : 70

Note : *Attempt any seven questions. All questions carry equal marks.*

1. What are the identifying characteristics of unconformity between two rock formations ? Explain non-conformity, disconformity and overlap. 10

2. Explain the following with diagrams : 2×5=10
 - (a) Anticline and syncline
 - (b) Plunge of an anticline

3. How can weathering of granitic rock in the foundation of a concrete dam create construction problems ? 10

4. Describe the main work activities of rivers in the young and middle stages. 10

5. Give the general view of the internal structure of the Earth as revealed by seismological evidence. 10
6. Draw neat labelled sketches of two layers of sedimentary rocks thrown to
- (a) Isoclinal folds dipping 30 degree west,
 - (b) Overfold with 15 degree east-dip,
 - (c) Recumbent fold with $\frac{1}{5}$ th of limbs showing as root zone. 10
7. Using the natural specimen of the following, how will you identify them using their physical and chemical properties? 10
- (a) Calcite
 - (b) Hornblende
 - (c) Quartz
 - (d) Orthoclase
 - (e) Muscovite
8. Explain the various processes that are responsible for formation of a great variety of igneous rocks from the same type of magma. Also discuss the method of process of crystallisation of magma. 10

9. Write detailed stratigraphical accounts of the following geological formations, highlighting the special position they occupy in Indian stratigraphy : 10

- (a) The Eocene System
- (b) The Marine Facies of Cretaceous System

10. Compare the relative merits and demerits of tunnel alignment which are made

- (a) Parallel to dip direction,
- (b) Parallel to strike direction,
- (c) Inclined to both these directions.

Also draw the illustrative sketches. 10
