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BICE-003

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

December, 2017

00302

BICE-003 : ENGINEERING GEOLOGY

Time : 3 hours *Maximum Marks : 70*

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

1. Explain the two important types of metamorphism and their effects. Name the other types of metamorphism and state how rocks formed by them are recognised. *10*

2. Distinguish between concordant and discordant bodies of igneous rocks. What are dykes and sills and how are they formed ? Illustrate the following with block diagrams : *2×5=10*

   Batholith, Laccolith and Lopolith

3. How do you detect a major fault in a site covered by overburden materials ? What type of materials are likely to be present in the fault zone ? Explain with examples, how a fault affects the construction of a heavy engineering structure. *10*

4. Write down the four processes responsible for mechanical and chemical weathering. *10*

5. Explain the constitution and properties of mantle and core of the Earth. Do you agree with the assumption about the composition of core on analogy and meteoritic composition ? Explain your reason. *10*

6. Explain the various structures exhibited by minerals in their natural habits. How far can any of them be taken as diagnostic in their indentification ? *10*

7. Explain the characters, textures and structure of any ***five*** of the following rocks so that they can be easily identified : *5×2=10*

   (a) Schist

   (b) Slate

   (c) Marble

   (d) Gneiss

   (e) Granite

   (f) Limestone

8. Give a brief account of geographical distribution, lithological characters and stratigraphical features of the Archean group of Peninsular India. Add a brief note on their economic importance. *10*

9. Give a general account of the stability conditions of a slope. In what circumstances is a particular part of the slope likely to suffer a failure ? *10*

10. Write short notes on the following : $4 \times 2\frac{1}{2} = 10$

(a) Normal Reservoir Level

(b) Dead Storage

(c) Arch Dam

(d) Clay Core