

Total number of printed pages:3

UG/3rd/UCE303

2021

ENGINEERING GEOLOGY

Full Marks: 100

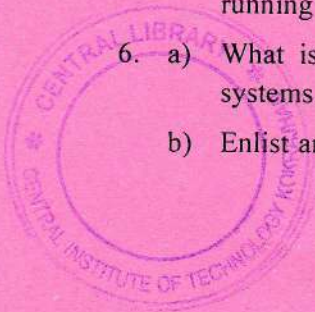
Time: Three hours

The figures in the margin indicate full marks for the questions.

Answer question 1 and any four questions from the rest.

1. a) What is the basic difference between epicentre and focus. 2
- b) What is the importance of fossils in geology? 2
- c) What are the desired conditions for the construction of a tunnel. 2
- d) How the capacity of a reservoir goes on decreasing gradually with passage of time? 2
- e) As a result of erosion all the glaciated hills are _____ and all the glaciated valleys are eroded to _____ shape. 2
- f) Give the importance of geology in civil engineering. 2
- g) Define the following terms, 8
Deflation, disintegration, decomposition and denudation.
2. a) Describe the three factors on which an effect of earthquake depends. 6
- b) Give any two examples of major earthquake in India. 2

- | | | |
|----|--|-----|
| | c) Classify earthquake on the basis of the type of movement. | 6 |
| | d) What are the causes of landslide? Discuss any two. | 6 |
| 3. | a) Discuss the various structural features of the underlying rocks in a dam site. Give suitable diagrams. | 8 |
| | b) Why tunnels driven through unconsolidated rocks require heavy lining? | 3 |
| | c) How the yielding capacity of water in a well varies with the type of rock beds? | 6 |
| | d) What remedies are adopted to minimize the silting up of the reservoirs? | 3 |
| 4. | a) What are the causes of folding and faulting? Also state its Engineering consideration. | 3+3 |
| | b) How true dip is different from apparent dip? Give examples. | 4 |
| | c) Discuss the various types of faults occurring within the earth crust. | 10 |
| 5. | a) How rock weathering occurs on the earth surface? What are the factors on which the process of weathering depends? | 2+3 |
| | b) How joints occurs in rocks? What are the effects of joints on engineering works? | 2+3 |
| | c) Discuss all the three stages of geological work done of running water. | 10 |
| 6. | a) What is a crystal system? Discuss any three crystal systems. | 2+6 |
| | b) Enlist and describe the various terms used in the order | 6 |



of decreasing amount of Lusture in minerals.

- c) Discuss the various ways by which minerals are formed. 6
7. a) What is metamorphism? Name the rocks you will expect to be derived by progressive metamorphism of the following rocks: 2+4
Sandstone, shale, limestone, dolerite.
- b) What are discordant bodies and what are its forms. 2+3
Describe with suitable diagrams.
- c) Describe the various textures of sedimentary rocks. 6
- d) How flow structure is different from pillow structure in igneous rocks. 3

