

Total No. of printed pages = 4

19/3rd Sem/UCE303

2021

ENGINEERING GEOLOGY

Full Marks – 100

Time – Three hours

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

Answer Question No. 1 and any *four* questions from the rest.

1. (a) Fill in the blanks : 2×5=10
- (i) Marble is formed by _____ metamorphism of _____.
- (ii) If the transporting agent is running water, then the finer insoluble material carried in _____ and soluble material carried in _____.
- (iii) _____ minerals show a false colour due to reflection and refraction from the mineral surface due to minute inclusion of _____ in the mineral at different locations.

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(iv) Gabbro is a _____ rock having _____ colour.

(v) A fault in which the _____ wall has apparently come down with respect to the _____ wall is known as normal fault.

(b) Answer the following questions : $2 \times 5 = 10$

(i) How weight and spacing of the atoms in a mineral varies the specific gravity ?

(ii) What is ETD process in geological work of physical agencies ?

(iii) How conchoidal is different from hackly in terms of the broken surface of a mineral ?

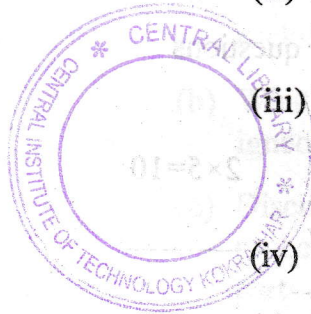
(iv) What is the need of palaeontology ?

(v) What is dip ?

2. (a) What are the causes of folding and faulting ?
4

(b) With the help of a diagram discuss the various parts of a fault. 6

(c) Discuss the various types of folds occurring within the earth crust. 10



3. (a) What are ore mineral and gangue mineral ?
Name the common gangue mineral which is associated with many metallic ore minerals. 6
- (b) State the water bearing capacity of Igneous, Sedimentary and Metamorphic rocks. 6
- (c) Define the following terms : * 8
- (i) Disintegration
 - (ii) Denudation
 - (iii) Decomposition
 - (iv) Seismograph.
4. (a) What are the factors on which effect of earthquake depends ? 6
- (b) What is the basic difference between focus and epicentre ? Classify earthquake on the basis of depth of focus. 6
- (c) What precautions can be adopted to make the building sufficiently earthquake proof. 8
5. (a) In which way geological problems of a dam site is different from reservoir site. 4
- (b) Discuss the essential physical properties that are to be determined for the suitability of any rock as a building stone. 6

- (c) How the various structural features effect the selection of a dam site ? 10
6. (a) Discuss the engineering consideration of geological work of wind. 4
- (b) How the various physical agents trigger geological work ? 8
- (c) How geological work done of wind takes place ? 10
7. (a) Enlist the various structure of metamorphic rocks. Give examples. 6
- (b) What are the engineering importance of igneous rocks ? 4
- (c) Discuss the two ways through which the process of transformation of loose rock particle into hard and massive sedimentary rocks is achieve. 4
- (d) Discuss the structure of igneous rocks. 6

