

**320416 (20)**

BE (4<sup>th</sup> Semester)  
Examination, April-May 2021

Branch : Civil

**ENGINEERING GEOLOGY**

*Time Allowed : Three Hours*

*Maximum Marks : 80*

*Minimum Pass Marks : 28*

**Note :** Attempt all questions. Part (a) is compulsory

however attempt any two parts from (b),

(c) & (d).

Q. 1. (a) Define 'Diagnostic properties' of a mineral. 2

(2)

(b) Describe various physical properties used  
for identification of minerals. 7

(c) Write detailed notes on :

(i) Moh's scale of hardness. 2

(ii) Fracture & cleavage in minerals. 2

(iii) Mineral forms 2

(iv) Streak and lusture of minerals. 1

(d) Write the physical properties of any four of  
the following : 7

(i) Gypsum

(ii) Barite

(3)

(iii) Orthoclase

(iv) Garnet

(v) Muscovite

Q. 2. (a) Define structure and texture of rocks. 2

(b) How the attitude of beds are expressed ?

What is an unconformity ? Describe various

types of unconformities in the rocks. 7

(c) Write notes on any four : 7

(i) Horst and Graben

(ii) Monocline and Homocline

(iii) Plunging and non plunging folds

(4)

(iv) Symmetrical and asymmetrical fold

(v) Pitch and plunge

(d) Differentiate between any four of the following : 7

(i) Chevron fold and box fold

(ii) Normal and reverse fault

(iii) Step fault and parallel fault

(iv) Drag fold and anticlinorium

(v) Thrust fault and recumbent fold.

Q. 3. (a) Define 'seismology'.

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(5)

(b) Describe the properties of the three main seismic waves and explain focus, epicentre & isoseismal lines, seismograph, seismogram, tectonism. 7

(c) Explain the Elastic Rebound theory of H.F. Ried to explain origin of the Earthquake. 7

(d) Explain the causes & preventive measures of the Earthquake. Add a note on seismic zones in India. 7

Q. 4. (a) Define soil creep. 2

(b) Classify various types of Landslide and Land subsidence. 7

(6)

(c) What are landslides ? Give its causes and suggest the preventive measures. 7

(d) Explain land subsidence. Give its causes and suggest the preventive measures. 7

Q. 5. (a) What are the contents of a geological map. 2

(b) Describe the influence of various geological structures upon stability of a Dam. 7

(c) Describe various geological considerations for selection of an ideal tunnel site. 7

(d) How you will identify the following in a geological map. 7

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**(7)**

(i) Fold

(ii) Fault

(iii) Dip direction

(iv) Thickness of a bed.

(v) Unconformity

