

R18

Code No: 153AV

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech II Year I Semester Examinations, December - 2019

ENGINEERING GEOLOGY

(Civil Engineering)

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART - A

(25 Marks)

- 1.a) Define frost action in weathering.
- b) What is the difference between foliated and non-foliated rocks?
- c) State the role of oxidation in weathering of rocks.
- d) Explain the causes of landslides.
- e) What is the luster of quartz and muscovite?
- f) What is meant by intensity and magnitude of an earthquake?
- g) Write any four sub divisions of silicate minerals.
- h) Write short note on Dams.
- i) Define Dyke and sills.
- j) State the causes of failures of a reservoir.

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PART - B

(50 Marks)

- 2.a) Describe the processes of mechanical weathering in a rock.
 - b) Explain the scope of geology in civil engineering.
- OR
- 3.a) Describe the effect of rock weathering with reference to tunnels.
 - b) What is the importance of structural geology in civil engineering?

[5+5]
[5+5]

- 4.a) Discuss about study of minerals by physical properties.
- b) Describe the petrographic characteristics of the following: Basalt and conglomerate.

[5+5]

OR

- 5.a) Enumerate the texture of the metamorphic rocks.
- b) Write the physical properties of the following i) Calcite ii) Feldspar.

[5+5]

- 6.a) Define joints? Classify them geometrical and genetically.
- b) Classify various faults on the basis of the apparent movement of the fault-blocks.

[5+5]

OR

- 7.a) Discuss in detail the method that are employed in ground water exploration.
- b) What are insitu and drift soils? Discuss origin of some common type soils.

[5+5]

- 8.a) Write short note on shield areas and seismic belts.
b) What are the advantages of geophysical prospecting and explain gravity method. [5+5]

OR

- 9.a) Explain principles of geophysical study by seismic method of geophysical prospecting.
b) State Richter scale of earthquake and what type of precautions to be taken building construction in seismic areas. [5+5]

- 10.a) Briefly present the purpose of tunnels and how influence of geology for successful tunneling.

- b) What are the geological conditions necessary for the stability of a dam? [5+5]

OR

- 11.a) Present the geological factors influencing water-tightness and life of reservoir.
b) Discuss the comparative merits and demerits of faulted and unfaulted rocks at the tunnel site. [5+5]