

R18

Code No: 153AV

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech II Year I Semester Examinations, February - 2024

ENGINEERING GEOLOGY

(Civil Engineering)

Time: 3 Hours

Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

- 1.a) Define weathering and its characteristics. [2]
- b) Discuss the importance of structural geology and describe related to Civil Engineering [3]
- c) What are the importance of study of minerals? [2]
- d) Discuss the petrographic characters of Hornblende, Muscovite. [3]
- e) Define springs, and cone of depression. [2]
- f) Explain the importance and applications of ground water exploration. [3]
- g) What is Seismic waves and their properties? [2]
- h) Illustrate the measures to be taken to prevent the landslides. [3]
- i) State the Purposes of tunneling. [2]
- j) Describe types of dams and its characteristics. [3]

PART – B

(50 Marks)

- 2.a) Enumerate the properties of rocks importance of weathering with reference to dams.
 - b) Present the importance of geology from Civil Engineering point of view. [5+5]
- OR**
- 3.a) Illustrate detail the failures of major civil engineering structures due to geological draw back.
 - b) Explain the impact of weathering conditions on dam site selection. [5+5]
- 4.a) Illustrate the advantages of study of minerals by physical properties.
 - b) Describe the petrographic characteristics of Conglomerate, Sand Stone, and Shale. [5+5]
- OR**
- 5.a) Describe the physical properties and characteristics of common economics minerals:
i) Asbestos, ii) Chlorite, iii) Garnet.
 - b) State and explain Dykes and sills, describe the texture of sedimentary rock. [5+5]

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6.a) Define strike and dip, classify the common geological structures associating with various folds.

b) Classify various common types of soils, their origin and occurrence in India. [5+5]

OR

7.a) Define cone of depression and write different types of ground water which occur in zone of aeration.

b) Explain in detail the electrical resistivity method for locating ground water. [5+5]

8.a) Compare the Special importance of Electrical resistivity methods, and seismic refraction methods.

b) Discuss the improvement of competence of sites by grouting. [5+5]

OR

9.a) Classify Principles of geophysical study by Radio metric methods and geothermal method.

b) State and discuss Richter scale, explain precautions to be taken for building construction in seismic areas. [5+5]

10.a) Discuss the various factors contributing to the success of a reservoir.

b) What type of factors effecting while selecting a dam site with reference to geology. [5+5]

OR

11.a) Describe elaborately various geological considerations for successful tunneling.

b) Why dams are constructed? Describe earthen dams and earth & rock fill dams. [5+5]

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