

Register No.:

Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FOURTH SEMESTER B.TECH DEGREE EXAMINATION (S), SEPT 2022**CIVIL ENGINEERING
(2020 SCHEME)****Course Code :** 20CET202**Course Name:** Engineering Geology**Max. Marks :** 100**Duration: 3 Hours****PART A***(Answer all questions. Each question carries 3 marks)*

1. Explain the reasons for the physical weathering of rocks
2. Describe the use of contour bunds in the conservation of soil
3. Explain the criteria used for the rating of earthquakes using Richter Scale
4. With the help of a neat diagram, explain the terms focus, epicenter, epicentral distance and depth to focus of an earthquake
5. Explain the role of confining beds in groundwater movement
6. Effective porosity of the aquifer materials determines the flow of water in to a well in the area. Justify.
7. Explain the hardness of minerals
8. How will you identify the rocks, granite and sandstone in the field
9. Explain the implications of the presence of faults in the proposed site of a dam
10. Explain the attitude of rocks

PART B*(Answer one full question from each module, each question carries 14 marks)***MODULE I**

11. a) Judge the statement that laterite is a residue left behind by the weathering of a granitic rock (7)
- b) Explain the origin of river sand with the help of relevant chemical equations (7)

OR

12. a) Water plays multiple roles in the origin of landslides. Justify the statement (7)
- b) Give an account of the erosional features generated by rivers (7)

MODULE II

13. a) How will you infer the details of the interior of the earth from the propagation of seismic waves through the earth (7)
- b) Proximity of an area to the plate boundary determines the proneness of an area to an earthquake. Do you agree with this statement? Explain (7)

OR

14. a) Explain the characteristic features of the different seismic waves (7)
b) How will you use the origin of earthquakes to classify earthquakes (7)

MODULE III

15. a) Discuss the different types of aquifers and nature of availability of water from each type (7)
b) Elucidate the role of zone of aeration in the movement of groundwater with the help of a diagram (7)

OR

16. a) Discuss the problems created by groundwater to the foundations of structures (5)
b) Examine the use of Ghyben-Herzberg relation in the study of coastal aquifers (9)

MODULE IV

17. a) Give an account of the physical properties and chemical composition of any three rock forming minerals (6)
b) Distinguish between clastic sedimentary rocks and chemical sedimentary rocks (8)

OR

18. a) Comment on the types of igneous rocks of Kerala with respect to their places of occurrence and engineering uses (7)
b) Structures of metamorphic rocks control their strength. Explain with examples (7)

MODULE V

19. a) Discuss the geological part of site investigation for tunnels (8)
b) Elucidate the engineering significance of folds (6)

OR

20. a) Discuss the various types of faults with the help of neat diagrams (8)
b) Explain the conditions at which presence of joints in a project site becomes crucial (6)
