

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**THIRD SEMESTER B.TECH DEGREE EXAMINATION, MAY 2019**

**Course Code: CE205**

**Course Name: ENGINEERING GEOLOGY**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any two full questions, each carries 15 marks.*

- |   | Marks |
|---|-------|
| 1 a) Define weathering of rocks. Explain the weathering by mechanical means.        | (7)   |
| b) Describe any two laboratory test used for assessing intensity of weathering.     | (4)   |
| c) Sketch the typical soil profile with a short description of each zone.           | (4)   |
| 2 a) Define aquifer. Discuss the classification of aquifers.                        | (5)   |
| b) Relate porosity and permeability in aquifers.                                    | (5)   |
| c) Explain any three methods to control sub-surface water during the constructions. | (5)   |
| 3 a) Elucidate any three geological classes of soils                                | (9)   |
| b) Explain the relevance of geology in construction engineering.                    | (6)   |

**PART B**

*Answer any two full questions, each carries 15 marks.*

- |   |     |
|---|-----|
| 4 a) Describe any three physical properties which affect the strength of minerals.                    | (6) |
| b) Explain: (i) Calcite (ii) Biotite (iii) Gypsum   | (9) |
| 5 a) Give an account of any two rock features that affect the strength of rock as foundation material | (6) |
| b) Discuss the origin of igneous rocks and sedimentary rocks  | (9) |
| 6 a) How do earthquake waves help to understand the interior structure of earth?                      | (6) |
| b) Write short notes on: (i) Basalt (ii) Marble   | (9) |

**PART C**

*Answer any two full questions, each carries 20 marks.*

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|---|-----|
| 7 a) Explain strike and dip with figures  | (6) |
| b) Describe any two geological factors considered essential in the construction of tunnels  | (8) |
| c) How are folds formed in rock? Discuss the significance of fold in selecting feasible sites for dam.  | (6) |
| 8 a) The dip amount and dip direction of two outcrop of a contact between limestone and sandstone, located at a distance of 500m apart, are $20^{\circ}$ /N150 <sup>0</sup> and | (5) |

21<sup>0</sup>/N330<sup>0</sup> Identify the structure and its strike.

- b) What are contours? Draw a contour pattern ( not on scale) representing a 60m high volcanic cone, with a dry crater of 25m deep, located along sea shore ( use contour interval – 20m) (3)
- c) List the causes of soil erosion (12)
- 9 a) What are faults? Describe the parts of a fault with diagram.How do faults differ from joints (10)
- b) Describe any three types of mass wasting. (6)
- c) Discuss the causes of landslides in Kerala (4)

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