

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Third Semester B.Tech Degree (S,FE) Examination December 2020 (2015 Scheme)

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

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| 1 | a) With neat diagram describe vertical distribution of ground water. | (6) |
| | b) Discuss Dearman classification of weathering. | (5) |
| | c) Define permeability? Discuss its importance in earth extraction and construction. | (4) |
| 2 | a) The Varkala sandstone has bulk volume of 145m^3 and estimated to have a pore space volume of 27.76m^3 . Calculate the porosity of the sandstone. | (5) |
| | b) Explain the relevance of weathering in construction engineering. | (4) |
| | c) Describe different types of weathering and their products. | (6) |
| 3 | a) Discuss different methods adopted to control ground water flow. | (5) |
| | b) Write a note on relevance of geological understanding of the construction sites. | (4) |
| | c) Using a profile picture, discuss characteristics of soil in different soil horizons. | (6) |

PART B*Answer any two full questions, each carries 15 marks*

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|---|---|-----|
| 4 | a) Discuss hardness of mineral. How are they useful in identifying a mineral? | (5) |
| | b) Define mineral feldspar. How are they identified in the field? How do they differ from quartz? | (6) |
| | c) Discuss the mineral properties that affect its strength. | (4) |
| 5 | a) What are granites? How do granites differ from basalts? | (4) |
| | b) How are sedimentary rocks differ from igneous rocks? | (5) |
| | c) Discuss seismic waves. How do body waves differ from surface waves? | (6) |
| 6 | a) Briefly explain the concept of plate tectonics. | (5) |
| | b) Compare and contrast calcite and quartz. | (4) |
| | c) Discuss engineering properties of rocks. | (6) |

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) What do you mean by crustal deformation? With neat diagram, explain different types of crustal deformations revealed on earth. (6)
- b) What are rock joints? How do they differ from geological faults? (5)
- c) What are contours? Draw a contour diagram representing 60m deep basinal depression within a plateau land located at 120m height from msl. Note that, the basin has a mound of 40m height at its center. (9)
- 8 a) What are structural contours? How are they helpful to deduce the structural relationship of rocks? (8)
- b) Calculate the true dip directions for a shale- coarse sandstone contact with strike N230°. (5)
- c) Discuss causes of soil erosion and conservation strategies adopted in different geographical terrains. (7)
- 9 a) Discuss various forms of coastal erosion and their protection strategies. (10)
- b) Explain mass wasting. What are the engineering strategies to limit mass wasting? (10)
