K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BENGALURU-560109

DEPARTMENT OF CIVIL ENGINEERING

SESSION: 2022-2023 (ODD SEMESTER)

ASSIGNMENT-1

Batch	2020-21
Year/Semester/Section	**2022/V/A**
Course Code/Title	18CV54/BASIC GEOTECHNICAL ENGINEERING
Name of the Course Incharge	Dr AREKAL VIJAY

Assignment No: 1 **Total marks:15**
Date of Issue: 28.10.22 **Date of Submission: 14.11.22**

Sl. No.	Assignment Questions	K Level	CO	Marks
1.	With a neat sketch **explain** three and two phase system of soil.	K2 (Understanding)	CO1	2
2.	**Explain** (a) Void ratio (b) porosity (c) Degree of saturation (d) Water content (e) Specific gravity (f) Bulk unit weight (g) Submerged unit weight	K2 (Understanding)	CO1	2
3.	What is consistency of soil? With a neat sketch **explain** consistency limits	K2 (Understanding)	CO1	2
4.	With a neat sketch **explain** plasticity chart and its importance	K2 (Understanding)	CO1	2
5.	**Explain** IS Classification of Soils.	K2 (Understanding)	CO1	2
6.	**Explain** the principle of compaction	K2 (Understanding)	CO2	1
7.	**Explain** the factors affecting compaction	K2 (Understanding)	CO2	1
8.	**Discuss** the effect of compaction on soil properties.	K2 (Understanding)	CO2	1
9.	List and **explain** the different compacting equipment used for compacting soils and also indicate their suitability	K2 (Understanding)	CO2	1
10.	**Explain** the field control of compaction.	K2 (Understanding)	CO2	1

Course In charge

Head of the Department

Professor & Head
Dept. of Civil Engineering
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DEPARTMENT OF CIVIL ENGINEERING

SESSION: 2022-2023 (ODD SEMESTER)

ASSIGNMENT-2

Batch	2020-21
Year/Semester/Section	**2022/V/A**
Course Code/Title	18CV54/BASIC GEOTECHNICAL ENGINEERING
Name of the Course Incharge	Dr AREKAL VIJAY

Assignment No: 2 **Total marks:15**
Date of Issue: 6.12.22 **Date of Submission: 16.12.22**

Sl. No.	Assignment Questions	K Level	CO	Marks
1.	**Classify** the types of soil structures.	K3 (Applying)	CO2	1
2.	**Illustrate** the soil-water system.	K3 (Applying)	CO2	1
3.	**Classify** the types of clay minerals.	K3 (Applying)	CO2	1
4.	**Illustrate** the effect of valence bonds on clay minerals	K3 (Applying)	CO2	1
5.	**Demonstrate** the application of base exchange capacity.	K3 (Applying)	CO2	1
6.	**State** Darcy's law. Explain its validity.	K3 (Applying)	CO3	2
7.	**List** the factors affecting permeability of soil	K3 (Applying)	CO3	2
8.	With neat sketch **demonstrate** quick sand phenomena	K3 (Applying)	CO3	2
9.	**Construct a** flow net and **List** their characteristics and uses	K3 (Applying)	CO3	2
10.	**Classify** total, neutral and effective stresses in soil. What is the significance of effective stress?	K3 (Applying)	CO3	2

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DEPARTMENT OF CIVIL ENGINEERING

SESSION: 2022-2023 (ODD SEMESTER)

ASSIGNMENT-3

Batch	2020-21
Year/Semester/Section	**2022/V/A**
Course Code/Title	18CV54/BASIC GEOTECHNICAL ENGINEERING
Name of the Course Incharge	Dr AREKAL VIJAY

Assignment No: 3 **Total marks:15**
Date of Issue: 6.1.23 **Date of Submission: 16.1.23**

Sl. No.	Assignment Questions	K Level	CO	Marks
1.	**Discuss** Mohr's strength theory.	K3 (Applying)	CO4	2
2.	**Illustrate** Mohr-Coulomb failure criterion.	K3 (Applying)	CO4	2
3.	**Elaborate** on total and effective shear strength parameters.	K3 (Applying)	CO4	2
4.	**Discuss** the factors affecting shear strength.	K3 (Applying)	CO4	2
5.	**Elaborate** on sensitivity and thixotropy.	K3 (Applying)	CO4	2
6.	**Demonstrate** mass-spring anolgy.	K3 (Applying)	CO5	2
7.	**Explain** Terzaghi's one-dimensional consolidation theory	K3 (Applying)	CO5	2
8.	**Classify** normally consolidated, under consolidated and over-consolidated soils	K3 (Applying)	CO5	2
9.	**Illustrate** how pre-consolidation pressure is determination by Casagande's method	K3 (Applying)	CO5	2
10.	**Elaborate** on consolidation characteristics of soil	K3 (Applying)	CO5	2

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