

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Third Semester**Agricultural Engineering***UAIT24301 - Principles of Soil Science and Engineering***Regulations - 2024**Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	What are the physical properties of soil?	L1	1	2
2.	Differentiate between plasticity and consistency.	L2	1	2
3.	Define soil survey.	L2	2	2
4.	Sketch the methods of soil reclamation.	L1	2	2
5.	Outline the Shrinkage limit and its effect on volume change.	L2	3	2
6.	Mention any four equipment (or) methods for field compaction of soil.	L1	3	2
7.	Show the coulomb's expression for shear strength.	L2	4	2
8.	State Darcy's law.	L2	4	2
9.	What is meant by local shear failure.	L1	5	2
10.	List out the factors affecting bearing capacity of soil.	L1	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Explain the methods of soil profiling and soil logging.	L2	1	8
	ii Describe the soil forming minerals and its process.	L2	1	8
	Or			
	b Demonstrate the procedure listed in IS code for determination of ion exchange property of soil.	L3	1	16
12.	a Discuss in detail about the method of classification of soil which is helpful for agricultural purpose.	L2	2	16
	Or			
	b i Examine the procedure for identifying land capability.	L4	2	8
	ii Explain problems faced in clay soil and list the remedial measures.	L3	2	8
13.	a Explain Atterberg limits and enumerate factors affecting Atterberg limits.	L3	3	16
	Or			
	b Explain briefly about standard proctor test with advantages & disadvantages.	L3	3	16

14.	a	Explain the triaxial shear tests based on drainage and their applicability. Mention its merits and demerits.	L3	4	16
		Or			
	b	Explain in detail with neat sketches, the laboratory determination of permeability methods.	L3	4	16
15.	a	Explain terzaghi's analysis of bearing capacity of soil in general shear failure with assumptions.	L3	5	16
		Or			
	b	Briefly explain about the method of analysis of finite slopes.	L3	5	16