



KERALA AGRICULTURAL UNIVERSITY
B. Tech. (Agri. Engg.) 2023 & Previous Admissions
IV Semester Final Re Examination – July 2026

Lwre.2205

Soil Mechanics (2+1)

Marks: 50
Time: 2 hours

- I State True or False** **(10x1=10)**
1. At compaction increases, the optimum water content increases.
 2. Permeability of the soil decreases by compaction.
 3. The stability of a slope is decreased by pore water pressure in the soil.
 4. The total stress analysis can be used for the stability of soils.
 5. Sedimentation analysis is useful for all soil particles smaller than 75 micron size.
- Fill in the blanks**
6. When the soil mass is not subjected to any lateral yielding or movement, the lateral earth pressure is called
 7. Active earth pressure coefficient (K_a) generally refers to
 8. The initial consolidation of a full saturated soil is.....
 9. If the soil stays at the place of its formation just above the parent rock, it is known as
 10. Water deposited soils are termed as
- II Write short notes on ANY FIVE of the following** **(5x2=10)**
1. Define the coefficient of compressibility and compression index.
 2. What are the different factors of safety used in the stability of slopes?
 3. What are the assumptions of Rankine's theory?
 4. What are the assumptions in Coulomb's theory?
 5. Differentiate between active and passive earth pressure.
 6. Differentiate between void ratio and porosity.
 7. Differentiate between compaction and consolidation.
- III Answer ANY FIVE of the following** **(5x4=20)**
1. Describe direct shear test. What are merits and demerits?
 2. What is Mohr's circle? Discuss its important characteristics.
 3. What are the factors that affect compaction? Discuss in brief.
 4. What are the assumptions that are generally made in the analysis of the stability of slopes?
 5. What are different types of earth pressure? Describe with examples.
 6. What is the consolidation? Discuss the limitation of Terzaghi's theory of consolidation.
 7. Compare pipette method and hydrometer methods.
- IV Write an essay on ANY ONE of the following** **(1x10=10)**
1. Define soil water content. Describe various methods for determination of water content in a laboratory.
 2. State Stoke's law. What is its use in the sedimentation method of analysis? What are its limitations?
