



KERALA AGRICULTURAL UNIVERSITY
B.Tech.(Agrl. Engg.) 2022 & Previous admissions
V Semester Final Examinations - January 2025

Iden.3108

Drainage Engineering (1+1)

Marks: 50
Time: 2 hours

- I Fill in the blanks** (10x1=10)
1. _____ affects crop growth mainly because of deficient aeration.
 2. The function of _____ is to remove excess water and salts from the soil profile in the rootzone of crop.
 3. _____ soils has electrical conductivity of saturation extract more than 4 Desi-Siemens/m and exchangeable Sodium Percentage less than 15.
 4. The _____ method is used to predicting peak rate of runoff from small agricultural watersheds.
 5. In curve number method of determination of drainage coefficient, numerical value of curve number varies from _____ to _____.
- State True or False**
6. 24-hr rain of desired recurrence interval is converted into 6-hr rainfall by multiplying by 0.6.
 7. Allowable velocity in open ditches for sand and sandy loam is 0.75 m/sec.
 8. On land having slopes less than 1.5 per cent, land smoothing is practiced as surface drainage.
 9. Bio drains are unlined underground earthen channels.
 10. Minimum grade of a tile drain should not be less than 0.10 per cent.
- II Write short notes on ANY FIVE of the following** (5x2=10)
1. What is piezometer? How it works?
 2. Define mole drainage.
 3. Define isobath maps.
 4. What is drainage coefficient?
 5. What is interceptor drainage?
 6. For most efficient cross section and minimum volume of excavation, what is relationship of bottom width in relation to depth and side slope?
 7. Define hydraulic conductivity.
- III Answer ANY FIVE of the following** (5x4=20)
1. What are adverse effects of waterlogging?
 2. What are factors affecting drainage?
 3. What are criterion for design of drainage system?
 4. What are various hand tools used for excavating tile trench and laying tiles?
 5. Define surface inlets and their suitability.
 6. How is the grade of tile drain established?
 7. Determine the size of the tile required at the end of 500 m long tile line if the drainage coefficient is 1 cm, grade is 0.3 % and tile spacing is 50 m.
- IV Write an essay on ANY ONE of the following** (1x10=10)
1. Determine the most efficient bottom width for a drainage channel to carry a flow of 2 m deep in clay soil. Compute the velocity and discharge capacity.
 2. What are the reclamation methods of saline and alkaline soils?
