

Roll No.

Total No. of Pages : 02

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B.Tech. (Agriculture Engineering) (Sem.-6)

DRAINAGE ENGINEERING

Subject Code : BTAG-608-19

M.Code : 91606

Date of Examination : 16-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) Define Waterlogging.
- b) What is the need of drainage system?
- c) Why is drainage important for agriculture?
- d) What do you understand by surface drainage coefficient?
- e) What is a 1% slope for drainage?
- f) How do you calculate drainable porosity?
- g) Define the term leaching requirement.
- h) Under which conditions mole drains are used?
- i) Define salt balance.
- j) What are the functions of drain envelope?

SECTION-B

2. What are the various causes of water logging?
3. What is the purpose of sub surface drainage and what are the various benefits of it?
4. A tile drainage system draining 15 hectares, flows at a design capacity for three days, following a storm. If the system is designed using a drainage coefficient of 2.25 cm, how much water will be removed during this period?
5. What is smear effect of vertical drains?
6. What is Hooghoudt's drain space equation, describe in detail?

SECTION-C

7. What do you meant by tile drains? What are the different methods of aligning them? How will you proceed for fixing their depth, spacing and sizes? What are their various advantages?
8. Design a drainage channel for a catchment area of 100 hectares, slope 0.45% coefficient of runoff 0.70, intensity of rainfall 4cm/hr and coefficient of rugosity 0.025.
9. a) Salinity in relation to irrigation and drainage-discuss
b) Discuss in detail about the principles and design aspects of biodrainage.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.