G.R. No.		Paper Code	U321-222A(ESE)

MAY 2022 - ENDSEM EXAM
T. Y. B. TECH. (CIVIL) (SEMESTER - II)
COURSE NAME: IRRIGATION & DRAINAGE
COURSE CODE: CVUA32182A
(PATTERN 2018)

Time: [1Hour]   [Max. Marks: 30]

(*) Instructions to candidates:
1) **Figures to the right indicate full marks.**
2) **Use of scientific calculator is allowed**
3) **Use suitable data where ever required**

Q.1 a. List advantages and limitations of sprinkler irrigation system.   [4]

   b. Explain design principles of sprinkler irrigation system.   [6]

OR

   b. Determine the required capacity of a sprinkler system to apply water at the rate of 1.25 cm/h. Two 186m long sprinkler lines are required. 16 sprinklers are spaced at 12m intervals on each line. The spacing between the lines is 20m.   [6]

Q.2 a. What is meant by "saline" and "alkaline" soils?   [4]

   b. Discuss critically the statement: "intensive irrigation leads to reduced crop yields".   [6]

OR

   b. Estimate the leaching requirement when electrical conductivity (EC) value of a saturated extract of soil is 10 m mho/cm at 25% reduction in the yield of a crop. The EC of irrigation water is 1.2 m mho/cm. EC value of the leaching water may be suitably assumed to be 2.   [6]

Q.3 a   What are the different materials which are commonly used for the drains, and what are their comparative merits and demerits   [4]

   b   Write short notes with sketch on the following: (i) Envelope filters; (ii) Gravity outlets; (iii) Pump outlets.   [6]

OR

   b   Determine the size of a tile at the outlet of a 6-hectare drainage system, if the drainage coefficient is 1 cm and the tile grade is 0.3%. Assume the rugosity coefficient for the tile drain material as 0.011.   [6]