

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B.Tech. Summer 2018 - 19 Examination**

**Semester: 6**  
**Subject Code: 03110350**  
**Subject Name: Drainage Engineering**

**Date: 11/05/2019**  
**Time: 10:30 am to 01:00pm**  
**Total Marks: 60**

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1 Objective Type Questions (Each of one mark) (15)**

1. Define subsurface drainage
2. What is meant by Drainable Porosity?
3. Drainage using a tube well is called as \_\_\_\_\_.
4. Why are rice plants not considered as a biodrainage system?
5. Saline soils can be reclaimed by the process of \_\_\_\_\_.
6. Generally subsurface drain require less maintenance than surface drain ( True/ False)
7. Drainage removes only \_\_\_\_\_ water from the soil.
  - (a) Gravitational water
  - (b) Capillary water
  - (c) Hygroscopic water
  - (d) Pressurized water
8. \_\_\_\_\_ is the condition of land in which the subsoil water table is located at or near the surface of land.
9. Define Drainage coefficient.
10. Cypress-Creek formula is used for calculating the hydraulic conductivity (True/ False)
11. The water drained under gravity of fine textured soil is more than that of coarse textured soil (True / False)
12. The \_\_\_\_\_ is used to describe a falling water table after its sudden rise due to an instantaneous recharge.
13. \_\_\_\_\_ drains are used to intercept foreign water that seeps down the hill.
14. The method that uses dead furrows on cropped farms for drainage of excessive water is called
  - (a) Surface inlet
  - (b) Tile drainage
  - (c) Bedding
  - (d) Mole drainage
15. \_\_\_\_\_ are used as a support when the drain pipe crosses an unstable strip of soil.

**Q.2 Answer the following questions. (Attempt any three) (15)**

- A) What are the two primary methods of surface drainage? Enumerate the negative effects of poor surface drainage on agricultural field.
- B) Discuss in brief about the maintenance of surface drainage system
- C) Explain the different layout patterns of composite pipe drainage system with diagram?
- D) Explain in brief the multiple well point system.

**Q.3 A) What are the benefits of subsurface drainage system? How does it enhance the farm productivity? (07)**

- B) What is a Biodrainage System? What are the advantages and disadvantages of biodrainage system? (08)

**OR**

- B) What is meant by soil salinisation? What are the causes? (08)

**Q.4 A) What is mole drain and where are they used? Explain the constructional details of mole drain (07)****OR**

- A) What is Drain Envelope? Explain its functions. (07)

- B) Discuss about the different types of drain pipe. What are the criteria used for selecting the material for drain pipe? (08)