

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2024**

IRRIGATION ENGINEERING

[Maximum Marks: **100**]

[Time: **3 Hours**]

PART-A

[Maximum Marks: **10**]

I. (Answer *all* questions in one or two sentences. Each question carries **2** marks)

1. Define flow irrigation.
2. Define Base Period.
3. List the types of weirs in diversion head works.
4. Define diversion dam.
5. Define alluvial canal.

(5 x 2 = 10)

PART-B

[Maximum Marks: **30**]

II. (Answer *any five* of the following questions. Each question carries **6** marks)

1. Derive the relationship between duty, base period and delta.
2. List the factors to be considered while selecting rain gauge station.
3. Briefly explain under sluices and its functions.
4. List out the factors to be considered for selection of dam site.
5. Explain the classification of dams based on structural action.
6. Explain the classification of canal based on function.
7. Sketch typical cross section of canal in cutting, partial cutting and partial embankment.

(5 x 6 = 30)

PART-C

[Maximum Marks: **60**]

(Answer *one* full question from each Unit. Each full question carries **15** marks)

UNIT – I

- III. a. Explain the factors affecting duty. (9)
- b. Explain the setting and maintenance of rain gauge stations. (6)

OR

- IV. a. Explain the methods of measuring rainfall with rain gauges. (6)
b. Explain the characteristics of good, average and bad catchment. (9)

UNIT – II

- V. a. Explain concrete weir with glacis using a neat sketch. (9)
b. Briefly explain fish ladder. (6)

OR

- VI. a. Explain vertical drop weir using a neat sketch. (6)
b. Explain the function of u/s apron, d/s apron, u/s curtain wall and d/s curtain wall. (9)

UNIT- III

- VII. a. Explain the terms full reservoir level, maximum water level, free board and gross free board. (9)
b. List out the forces acting in Gravity dam. (6)

OR

- VIII. a. List the measures to prevent failure of a gravity dam. (6)
b. Describe with sketch the practical profile of a low dam. (9)

UNIT - IV

- IX. a. Explain the term regime channel and conditions for initial regime and final regime. (6)
b. Describe causes and effects of soil erosion. (9)

OR

- X. a. List the advantages and disadvantages of canal lining. (6)
b. Explain about canal escape and its types. (9)
