TED (15/19) 4012
(Revision – 2015/19)

A21 – 01698

Reg. No……………………
Signature ………………….

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL – 2021

IRRIGATION ENGINEERING

[Maximum Marks: 75] [Time: 2.15 Hours]

PART-A

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

I

1. List the various types of rain gauges.
2. Define percolation.
3. Write down the different types of canal lining.
4. Define the term berm.
5. List out the different types of spillways. (3×2=6)

PART-B

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

II

1. List the factors affecting Duty.
2. Distinguish between Barrage and Weir.
3. Briefly explain the forces acting on a gravity dam.
4. List out the classifications of Canals.
5. Define the term Irrigation and state its necessity.
6. List the factors to be considered for the selection of site for diversion works.
7. Define saturation gradient and phreatic line. (4×6=24)

PART-C

(Answer ***any of the three units*** from the following. Each full question carries 15 marks)

UNIT-I

III (a) Define the terms Duty, Delta, Base period and Crop period. (8)

(b) Derive the relation between Duty, Delta and Base period. (7)

OR

IV (a) Briefly explain the factors affecting runoff. (6)

(b) Explain the methods of measuring velocity by floats, velocity rod and current meters. (9)

UNIT – II

V (a) Explain the terms Head regulator and Scouring sluice. (7)

(b) Explain the purpose of a Divide wall and Fish ladder in a diversion headwork. (8)

OR

VI (a) Describe with the help of a neat sketch the component parts of a weir. (7)

(b) Define the term Head works and explain main classifications of Head works. (8)

UNIT – III

VII (a) Describe the causes of failure of earth dams. (9)

(b) Distinguish between low dam and high dam. (6)

OR

VIII (a) Briefly explain the elementary profile and practical profile of a gravity dam with the help of neat sketches. (9)

(b) Describe with neat sketch drainage gallery and its functions. (6)

UNIT – IV

IX (a) Draw and explain any three types of cross drainage works. (9)

(b) Define the terms: balanced depth of cutting and regime channel. (6)

OR

X (a) Sketch typical cross section of canal in cutting, partial cutting and partial embankment. (6)

(b) Explain the classification of canals based on their discharge. (9)
