

FOURTH SEMESTER DIPLOMA EXAMINATION IN CIVIL  
ENGINEERING — APRIL, 2017

**IRRIGATION ENGINEERING**

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer the following questions in one or two sentences. Each question carries 2 marks.

1. Define irrigation.
2. What are the different types of rain gauges ?
3. What is a fish ladder ?
4. Define surplus escape.
5. What do you mean by an aqueduct ?

(5×2=10)

PART — B

(Maximum marks : 30)

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

1. What are the methods by which we can prevent soil erosion ?
2. Briefly explain the advantages and disadvantages of irrigation.
3. Show the different parts of a weir with a neat sketch.
4. Define percolation. Explain its effects and remedies.
5. Which are the major crop seasons in India ?
6. What are the different ways by which an earth dam can fail ?
7. What do you mean by river gauging ? Explain a method to find out the velocity of a river.

(5×6=30)

## PART — C

(Maximum marks : 60)

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

## UNIT — I

- III (a) Why is irrigation necessary in India ? Explain. 8  
 (b) What are the factors affecting duty ? 7

OR

- IV (a) Explain Hydrological cycle with a neat sketch. 8  
 (b) What are the factors affecting runoff in an area ? 7

## UNIT — II

- V (a) Define the terms : — weir, under sluices, guide bank, head work. 8  
 (b) Give a neat layout of a head work. 7

OR

- VI (a) Discuss the component parts of a weir and their functions. 8  
 (b) Explain scouring. How can you reduce them ? 7

## UNIT — III

- VII (a) What are the factors to be considered while selecting the site of reservoirs ? 8  
 (b) List the forces acting on an earth dam, show it with a neat sketch. 7

OR

- VIII (a) Give the site investigations required for the construction of dams and reservoirs ? 8  
 (b) Explain : — spillway, saturation gradient. 7

## UNIT — IV

- IX (a) How are canals classified based on the carrying capacity ? 8  
 (b) What are canal linings ? What are its advantages ? 7

OR

- X (a) Explain : — super passage, aqueduct. 8  
 (b) What are berms ? List its advantages. 7