

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2019**

IRRIGATION ENGINEERING

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. What is meant by Transpiration ?
2. Define term Catchment.
3. What is Percolation ?
4. Define Phreatic line.
5. What is Super Passage ?

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Derive the relation between Duty, Delta and Base period.
2. What are the factors affecting Runoff ?
3. Distinguish between Barrage and Weir.
4. Discuss different types of Surplus Weirs.
5. What are the Preventive measures against failure of earth dams ?
6. Describe different types of cross drainage works.
7. What are the advantages of canal lining ?

(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) What are different factors affecting Duty ? 7
- (b) The Duty of the water in a canal for Tobacco crop was estimated as 1400 hectares/cumec. First watering was done on 24th November, last watering was done on 21st March. Calculate Delta. 8

OR

- IV (a) Describe different methods for estimation of rainfall. 7
- (b) Explain different methods for measuring velocity of flow. 8

UNIT — II

- V (a) Describe the effect of percolation and their protective work in Irrigation structures. 7
- (b) List the factors to be considered for selection of site for diversion head work. 8

OR

- VI (a) What are the different functions of a diversion head work ? 7
- (b) Describe with sketches different parts of a diversion head works. 8

UNIT — III

- VII (a) Distinguish between Low Dam and High Dam. 7
- (b) What are the causes of failure of Earth Dams ? 8

OR

- VIII (a) Discuss different types of spillways. 7
- (b) What are the factors influencing Selection of site for reservoir ? 8

UNIT — IV

- IX (a) Describe with sketches different cross sections of Canals. 7
- (b) A Canal has a bed width of 9.0 meters. Full supply depth is 1.5 meters, side slope in cutting 1:1 and filling 1½ :1, Top width of bank is 2 meters. Free board is kept as 0.6 meter. Calculate the balancing depth so as to get most economical section. 8

OR

- X (a) What are the effects of soil Erosion ? 7
- (b) List the advantages of Sprinkler Irrigation. 8