

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018

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. Define Transpiration.
2. Write two classifications of Head Works.
3. Define crest.
4. State the use of detention dams.
5. State the function of Aqueduct.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Write the different types of Irrigation.
2. List the factors affecting Duty.
3. Draw and explain component parts of a diversion head works.
4. List the main points to be considered while selecting a site for a Dam.
5. Explain different types Spillways.
6. Describe different classification of canal based on the carrying capacity of the canal.
7. Briefly explain different types 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) Draw and explain the working of an Automatic Recording Rain Gauge. 8
- (b) In an area Paddy crop is transplanted in 20 days and the total depth of water required on the field is 450 mm during this period if there is a use full rain fall of 100 mm in the same area what should be the duty of water supplied at the head of the canal. Assume 20% transmission losses and calculate duty at the tail end of the canal. 7

OR

- IV (a) Describe Stream gauging. List its objective. 8
- (b) Six Rain Gauge stations A, B, C, D, E and F are located in catchment areas of 40, 33, 46, 30, 25 & 28 sq. km. respectively. The rain fall records at each station is 200, 260, 220, 300, 310 & 360 mm respectively. Calculate the average rain fall over the entire area. 7

UNIT — II

- V (a) State and explain main classifications of Head Works. 6
- (b) Distinguish between Barrage and Weir. Explain different types. 9
- OR
- VI (a) List the main protective work for a river weir. 6
- (b) Explain the difference between head sluice and a scouring sluice by giving neat sketches. 9

UNIT — III

- VII (a) Distinguish between Low Dam and High Dam. 7
- (b) In how many ways the earth dam fails? Explain them with sketches. 8

OR

- VIII (a) Sketch the practical profile of a Gravity Dam. 7
- (b) List out the components of a Tank sluice with tower head. With Sketch. 8

UNIT — IV

- IX (a) Explain different classifications of canals based on their functions. 9
- (b) Describe the different methods of alignment of canals. 6

OR

- X (a) Draw and explain any three types of cross drainage works. 9
- (b) State the advantages of Sprinkler Irrigation. 6