N19 - 00178

TED (15) – 4012

(REVISION — 2015)

Reg. No.....

Signature .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 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. Define Irrigation.
2. Define Weir.
3. Define Creep length.
4. List the different types of dams according to the material used in construction.
5. Define berms. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. List the factors for selecting suitable site for a rain gauge station.
2. State the characteristics of good, average and bad catchment.
3. Sketch the component parts of a weir.
4. List the forces acting on a gravity dam.
5. Explain geological factors in selection of site for reservoirs.
6. Explain the advantage of canal lining.
7. Explain typical cross section of canals with sketch. (5×6 = 30)

Marks

PART — C

(Maximum marks : 60)

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

UNIT — I

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

(b) Explain the factors affecting Run-off. 7

OR

IV (a) Explain the advantages of Irrigation. 8

(b) Explain the Theissen's Polygon method to find out average rain fall over a basin. 7

UNIT — II

V (a) Explain the factors for selecting a suitable site for head works. 8

(b) Sketch the layout of a Diversion Head works. 7

OR

VI (a) Explain the terms :

(i) Percolation (ii) Percolation gradient (iii) Uplift (iv) Scour 8

(b) Define a Diversion Head work. Explain the purpose of a Diversion Head work. 7

UNIT — III

VII (a) Explain drainage gallery with sketch. 8

(b) Explain the situations suitable for earth dams. 7

OR

VIII (a) Sketch the profile of a dam and explain the following terms.

(i) Dead storage (ii) Live storage (iii) Free board 8

(b) Explain siphon spillway with figure. 7

UNIT — IV

IX (a) Define soil erosion. Explain the methods of prevention of soil erosion. 8

(b) Explain Level crossing cross drainage works. 7

OR

X (a) Explain permanent types of canal lining. 8

(b) Explain syphon aqueduct with sketch. 7