

TED (15/19) - 4012  
(REVISION-2015/19)

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Reg.No.....  
Signature.....

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER - 2023**

**IRRIGATION ENGINEERING**

(Maximum Marks:100)

(Time: 3 Hours)

**PART - A**  
( Maximum Mark : 10 )

**Marks**

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

1. Define the term crop period.
2. List two main crop seasons in India.
3. Define groynes.
4. Define the term full reservoir level.
5. Define the term berm in canal.

( 5 x 2 = 10 )

**PART - B**  
( Maximum Mark: 30 )

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

1. Describe necessity of irrigation.
2. Distinguish between flow and lift irrigation.
3. List the component parts of a diversion headworks.
4. Explain the factors to be considered for selecting a site for a diversion headwork.
5. List the forces acting on a gravity dam.
6. Describe with a neat sketch straight drop spillway.
7. Describe briefly the necessity of canal drops and canal escapes in a channel.

( 5 x 6 = 30 )

*P.T.O*

**PART – C**

(Maximum Mark: 60)

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

**UNIT - I**

- III (a) State the factors affecting duty of water. (8)  
(b) Describe the factors affecting runoff from the catchment area. (7)

**OR**

- IV (a) Derive a relationship between Duty and Delta for a given base period.  
Find the duty of water for a crop which requires 900mm of water for a base period of 120 days. (8)  
(b) Explain the Thiessen polygon method for determining average depth of rainfall over an area. (7)

**UNIT – II**

- V (a) Explain the classification of canal headworks. (8)  
(b) Sketch and describe the functions of canal head regulator. (7)

**OR**

- VI (a) Describe with a neat sketch the component parts of a weir. (8)  
(b) Define the following terms in irrigation work:  
i) Scour ii) Percolation (7)

**UNIT – III**

- VII (a) Explain the classification of dam based on its function. (8)  
(b) Describe with neat sketch the elementary profile of a gravity dam. (7)

**OR**

- VIII (a) Explain the causes of failure of earth dams. (8)  
(b) Describe about Diaphragm type earth dams. (7)

**UNIT – IV**

- IX (a) Explain the classification of canal based on alignment. (8)  
(b) Briefly describe the necessity and advantages of lining of irrigation channels. (7)

**OR**

- X (a) Describe with neat sketch super passage. (8)  
(b) Briefly describe causes of soil erosion. (7)

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