

**3424**  
**BOARD DIPLOMA EXAMINATION, (C-09)**  
**MARCH/APRIL - 2019**  
**\* DIPLOMA IN CIVIL ENGINEERING**  
**IRRIGATION ENGINEERING**  
**FOURTH SEMESTER EXAMINATION**

**Time: 3 Hours**

**Total Marks: 80**

**PART - A (10 x 3 = 30 Marks)**

*Note 1: Answer all questions and each question carries 3 marks*

*2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences*

1. Differentiate between direct and storage irrigation ?
2. State the principal crop seasons in our country ? What are the main crops grown in the respective seasons?
3. Differentiate between a storage headwork and diversion headwork.
4. List the component parts of a weir.
5. What is a drainage gallery? Why drainage galleries are provided in gravity dams?
6. Define (a) F.R.L (b) M.W.L (c) Freeboard of a reservoir.
7. What is a Spillway ? What are its functions in a dam ?
8. Draw the cross section of a canal in partial embankment and partial cutting.
9. What is a watershed? State the need for watershed development in our country.
10. What are the effects of soil erosion?

**PART - B (5 x 10 = 50 Marks)**

*Note 1: Answer any five questions and each question carries 10 marks*

*2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer*

11. What are the different methods of Irrigation ? Explain about Border strip method and Contour forming method ?
- \* 12. Explain the working of float type automatic rain gauge with a neat sketch ?
13. Draw the layout of a diversion headwork and state the functions of head regulator, scouring sluices and guide banks.
14. What are the different modes of failure of gravity dams? Explain with the stability conditions?
15. Why drainage arrangements are necessary in earthen dams? Explain about the drainage arrangements provided in earthen dams.
16. Draw a neat sketch of zoned section earth dam & explain the functions of its component parts.
17. Explain briefly different ways in which a canal can cross a drainage and name the structure's in each condition with sketches.
18. Explain about the following terms.
  - a) Rain water harvesting.
  - b) Soil moisture conservation.
  - c) Artificial recharge of water.

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