



c09-c-403

**3424**

**BOARD DIPLOMA EXAMINATION, (C-09)**  
**OCT/NOV—2015**  
**DCE—FOURTH SEMESTER EXAMINATION**  
**IRRIGATION ENGINEERING**

Time : 3 hours ]

[ Total Marks : 80

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**PART—A**

3×10=30

**Instructions :** (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. A channel carrying 2 cumec of discharge is able to irrigate 800 hectares of land. In the second system, a channel carrying 0.8 cumec is irrigating 300 hectares of land. Base period for both crops is 140 days. Which system is running economically?
2. Explain basin flooding method with a neat sketch.
3. What are 'marginal bunds'? Why are they provided?
4. What is a headwork? What is its necessity on a river?
5. Define (a) phreatic line, (b) saturation gradient and (c) breaching section in the dam.
6. What is a spillway? What are its functions in a dam?
7. Define (a) dead storage, (b) live storage and (c) free board.

- \* 8. Define (a) syphon aqueduct and (b) super passage.
9. What is meant by water harvesting? Why is it necessary?
10. What is a watershed? State the need for watershed development in our country.

**PART—B**

10×5=50

**Instructions** : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain the advantages and disadvantages of irrigation.
12. Explain Symon's rain gauge with a neat sketch.
13. (a) Draw a neat sketch of a weir and name its component parts.  
(b) Describe any five component parts of a weir.
14. (a) What is the necessity of grouting in dams?  
(b) Explain different types of grouting.
15. Draw a neat sketch of zoned section earth dam and explain the functions of its component parts.
16. What are the different modes of failure of gravity dams? Explain with the stability conditions.
- \* 17. What is meant by a canal lining? What are the advantages and disadvantages of canal lining?
18. (a) List some of the RWH structures.  
(b) Explain about check dam and percolation tanks.

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