



c-16-c-402

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**BOARD DIPLOMA EXAMINATION, (C-16)**  
**MARCH/APRIL—2018**  
**DCE—FOURTH SEMESTER EXAMINATION**  
**IRRIGATION ENGINEERING**

Time : 3 hours ]

[ Total Marks : 80

**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. Differentiate between direct and storage irrigation.
2. State any three points to be considered for setting up of rain gauge station at a place.
3. Distinguish between barrages and weirs.
4. Define the terms (a) full reservoir level, (b) gravity dam and (c) free board.
5. Explain 'balanced depth of cutting' and state its necessity.
6. State the need for canal lining.
7. State the characteristics of Delta Rivers.
8. With the help of a neat sketch, explain about sprinkler irrigation.
9. State any six duties of water users associations.

- \* 10. State any three methods of artificial recharge of groundwater.

**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. (a) State different methods of expressing duty. 4  
(b) Explain the factors affecting duty of water. 6
12. (a) State (i) Ryve's formula and (ii) Dickens formula for determining maximum flood discharge. 2  
(b) Six rain gauge stations are enclosed by catchment areas of 60, 55, 80, 58, 57 and 60 sq. km respectively. The rain fall recorded at the six stations are 250, 300, 230, 350, 320 and 410 mm respectively. Find the average rainfall over the entire catchment area by Theissen's polygon method. 8
13. With the help of a sketch, explain about the head regulator.
14. (a) State different types of spillway. 4  
(b) Distinguish between low dam and high dam. 6
15. Explain the causes of failures of earthen dams and their precautions.
16. With the help of neat sketches, explain about typical cross sections of canals.
17. (a) State the ill-effects of water logging. 6  
(b) Explain the term 'meandering of river'. 4
18. (a) Explain the method of water harvesting through check dams. 5  
(b) Explain the concept of watershed management. 5

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