



**c20-c-405**

**7428**

**BOARD DIPLOMA EXAMINATION, (C-20)  
OCTOBER/NOVEMBER—2023  
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. State any three advantages and disadvantages of irrigation.
2. Define precipitation and catchment area.
3. State any three factors affecting run-off.
4. List the component parts of weir.
5. Define the terms full reservoir level, maximum water level and gravity dam.
6. Distinguish between low dam and high dam.
7. What is meant by balancing depth of cutting?
8. What is meant by canal lining? Write different types of lining.
9. List different stages of flow of rivers.
10. State any three advantages of rainwater harvesting.

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **eight** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11.** (a) Derive the relation between duty, delta and base period. Also find the duty of water, if a crop requires total depth of 920 mm of water for a base period of 120 days.

**(OR)**

- (b) Explain the factors affecting duty of water.

- 12.** (a) Sketch the general layout of diversion head works and describe its component parts.

**(OR)**

- (b) Write a short note on percolation, percolation gradient and effect of percolation on irrigation works.

- 13.** (a) List various types of earthen dams and explain them with sketches.

**(OR)**

- (b) Explain drainage arrangements in earth dams with a sketch.

- 14.** (a) Explain the different methods of alignment of canals with sketches.

**(OR)**

- (b) Explain syphon aqueduct and super passage with sketches.

- 15.** (a) Explain various methods of prevention of soil erosion.

**(OR)**

- (b) State the causes of water logging and effects of water logging.

**PART—C**

10×1=10

- Instructions :** (1) Answer the following question.  
(2) The question carries **ten** marks.  
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

**16.** Explain in detail the causes of failure of gravity dam and write their remedial measures.

★★★