7428

BOARD DIPLOMA EXAMINATION, (C-20)

MAY-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.** Write the difference between perennial irrigation and inundation irrigation.
- **2.** State any two empirical formulas for the estimation of maximum flood discharge from catchment.
- **3.** Define Catchment and Runoff.
- **4.** Write the functions of diversion head works.
- **5.** State any three situations where earthen dams are suitable.
- **6.** Define the terms (a) full reservoir level, (b) top bund level and (c) free board.
- **7.** State the need of canal lining.
- **8.** What is a Ridge canal? Explain with a sketch.
- **9.** Explain the term meandering of river.
- **10.** Write any three functions of water user associations.

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Instructions: (1) Answer all questions.

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- (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) Write various advantages and disadvantages of irrigation.

(OR)

- (b) Define duty, delta and base period. Find the delta for the crop, when its duty is 864 hectares/cumec on the field, the base period of this crop is 120 days.
- **12.** (a) Classify head works and state their suitability under different conditions.

(OR)

- (b) Draw general layout of diversion head works and briefly explain about its component parts.
- **13.** *(a)* State the three types of earthen dams with sketches of typical cross-sections.

(OR)

- *(b)* Explain construction and contraction joints with sketches in gravity dams.
- **14.** (*a*) Explain aqueduct and super passage with sketches.

(OR)

- (b) Explain different types of canal lining.
- **15.** (*a*) State the causes and ill effects of waterlogging.

(OR)

(b) State and explain different stages of flow of rivers.

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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.** Sketch the typical cross-sections of canal in cutting, embankment, partial cutting and embankment. What is the purpose of providing berms in canal cross-sections?

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