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**Question Paper Code : 80223**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Seventh Semester

Civil Engineering

CE 6703 – WATER RESOURCES AND IRRIGATION ENGINEERING

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the two important standards for irrigation water?
2. Define flood walls.
3. Define consumptive use of surface water.
4. What is multipurpose reservoir?
5. What are canal regulators?
6. Define Duty, Delta and Base period.
7. What is the need for water budget?
8. What is the purpose of canal lining?
9. Why drop irrigation is preferred?
10. Define micro irrigation.

PART B — (5 × 16 = 80 marks)

11. (a) Briefly state the various steps needed for planning an irrigation project. List the various objectives of water resources development in the context of the lesser developed countries.

Or

- (b) What are the various water sources used for irrigation? How is the storage capacity of a large reservoir fed by a dam for a large irrigation project determined?

12. (a) Outline briefly the concept of ground water budgeting and its importance in the determination of the safe yield from a basin.

Or

- (b) What are the quality criteria for irrigation water? Show the relationship between the different parameters. Classify the irrigation water based on various parameters.
13. (a) What is meant by transpiration by plants? Do you consider it an evil as it causes water loss from the soil and plants? What does transpiration coefficient means?

Or

- (b) Suggest a method for estimating the consumptive use of crops over a large area. Classify the consumption use of water by crop based on its estimation during specific periods.
14. (a) What are cross drainage work? What is necessity of such a work in a canal project, and how does this necessity is fulfilled by such water?

Or

- (b) List the different types of canal lining in common use. Draw a neat sketch of a typical cross section of a canal carrying a discharge of  $60 \text{ m}^3/\text{sec}$  and lined with brick in cement motor. Mark the salient features on the sketch.
15. (a) What is tank irrigation? Differentiate between isolated tanks and Group tanks. How can compute the storage capacity of an irrigation tank?

Or

- (b) What is participating irrigation management? Give a case study of the above type of management and explain.