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Question Paper Code : 20284

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Seventh Semester

Civil Engineering

CE 6703 — WATER RESOURCES AND IRRIGATION ENGINEERING

(Regulations 2013)

(Common to PTCE 6703 – Water Resources and Irrigation Engineering for
B.E. (Part Time) Sixth Semester Civil Engineering - Regulation 2014)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Differentiate single and multipurpose reservoir.
2. What are Levees?
3. List the method of estimating consumptive water use.
4. Outline the aim of National Water Policy
5. What is meant by duty and delta?
6. What is crop rotation?
7. What are the forces acting on a gravity dam?
8. What is the purpose of canal lining?
9. What is micro-irrigation?
10. Why irrigation scheduling is significant?

PART B — (5 × 13 = 65 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 is a multipurpose project? What are the functional requirements in multipurpose projects? How to estimate requirement of water for irrigation purpose?

12. (a) What is Master Plan in water resources? Explain the scope and aims in detail.

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) An irrigation canal has gross commanded area of 80,000 ha out of which 85% is culturable irrigable. The intensity of irrigation for Kharif season is 30% and for Rabi season is 60%. Find the discharge required at the head of the canal if the duty at its head is 800 ha/cumecs for Kharif season and 1700 ha/cumecs for rabi season.

Or

- (b) Suggest a method for estimating the consumptive use of crops over a large area. Classify the consumptive use of water by crop based on its estimation during specific periods.
14. (a) What are cross drainage works? Explain its types and its necessity along with neat diagrams.

Or

- (b) Compare Kennedy's and Lacey's theory along with the defects in each type.
15. (a) Discuss in detail about the merits and demerits of different irrigation methods.

Or

- (b) Define Irrigation Scheduling. Outline the methods to schedule the irrigation in detail.

PART C — (1 × 15 = 15 marks)

16. (a) Explain in detail the role, significance and usefulness of Participatory Irrigation Management under the present day context with a case study.

Or

- (b) Discuss about the component parts of a Diversion headwork also give the reasons and remedial measures for its failure.