Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 52783

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Seventh Semester

Civil Engineering

CE 6703 — WATER RESOURCES AND IRRIGATION ENGINEERING

(Regulation 2013)

(Common to PTCE 6703 – Water Resources and Irrigation Engineering – Civil Engineering – Sixth Semester – Regulation 2014)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Surcharge storage.

2. What is Maximum Probable Flood?

3. What are the importance of water budgeting?

4. Write the equation for calculating SAR.

5. Define Duty of water.

6. Find the delta for a crop if the duty for a base period of 110 days is 1400 hec/cumecs.

7. What are the classifications of dams based on materials of construction?

8. Write the objectives of Diversion Headworks.

9. What is Isolated tank?

10. What are the advantages of water user association?

PART B — (5 × 13 = 65 marks)

11. (a) Explain the necessity of planning of water resources.

Or

(b) Illustrate the various types of Reservoir.

12. (a) Explain the factors affecting the consumptive use of water.

Or

(b) Explain the advantages of conjunctive use of surface water.

13. (a) Explain the merits and demerits of irrigation in present day.

Or

(b) A stream of 150 l/s was diverted from a canal and 120 l/s were delivered to the field. An area of 1.8 hectares was irrigated in 8 hrs. The effective depth of root zone was 1.7 m. The runoff loss in the field was 400 cm. The depth of water penetration varied linearly from 1.5 m at the head end of the field to 1.1 m at the tail end. Available moisture holding capacity of the soil is 22 cm/m depth of soil. It is required to determine the water conveyance efficiency, water application efficiency, water storage efficiency and water distribution efficiency. Irrigation was started at a moisture extraction level of 40% of the available moisture.

14. (a) Explain the failures of Gravity dams and write the precautions against failure.

Or

(b) Illustrate the various types of cross drainage works.

15. (a) Explain the various types of tube well with neat sketch.

Or

(b) Explain in detail the Participatory irrigation Management.

PART C — (1 × 15 = 15 marks)

16. (a) (i) Discuss the flood control and flood damage preventive methods. (9)

(ii) Make a note on micro irrigation systems, their merits and demerits. (6)

Or

(b) (i) Explain the multipurpose reservoirs. (10)

(ii) Make a note on canal lining. (5)

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