

G 1233

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Reg. No.....

Name.....



B.TECH. DEGREE EXAMINATION, MAY 2015

Sixth Semester

Branch : Civil Engineering

CE 010 605—WATER RESOURCES ENGINEERING (CE)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. What do you mean by base period or base of the crop ?
2. List the methods of estimating runoff.
3. What is meant by coefficient of transmissibility ?
4. Write a note on infiltration gallery.
5. Define balancing depth.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. State the different modes of irrigation.
7. Explain hydrological cycle and its components.
8. State and explain Dupuit's theory of aquifers.
9. Differentiate between Bed load and Suspended load.
10. Which are the factors governing the site selection of a reservoir ?

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. Discuss on the historical development of irrigation in India through ages.

Or

Turn over

12. 800 m^3 of water is applied to a farmer's rice field of 0.6 hectares. When the moisture content in the soil falls to 40 % of the available water between the field capacity (36 %) of soil and permanent wilting point (15 %) of the soil crop combination, determine the field application efficiency. The root zone depth of rice is 60 cm. Assume porosity = 0.4.
13. Define a "Unit hydrograph" and explain how is it used to estimate the flood hydrograph of a stream of a given magnitude and of the same duration.

Or

14. What is meant by "Design flood" and what is its importance ? Enumerate the various methods used for estimating the design flood discharge from a certain catchment.
15. Distinguish between non-equilibrium and equilibrium conditions in an aquifer from which water is drawn through a well. Explain when the above conditions are expected in an aquifer.

Or

16. Discuss briefly the design principles involved in the design of a strainer type of a tube well.
17. Explain in detail the classification of canals and their alignment.

Or

18. What do you mean by a canal outlet ? State the requirements of a good canal outlet. Which are the different types of canal outlets ?
19. Explain in detail the calculation of reservoir capacity and safe yield from mass inflow curve.

Or

20. What do you mean by flood control ? What are its causes ? State the methods of flood control and principles of flood routing.

(5 × 12 = 60 marks)

