

Roll No.

Total Pages : 3

002621

May 2024

**B.Tech. (Civil) - VI SEMESTER
HYDROLOGY AND WATER RESOURCES
ENGINEERING
(PCC-CE-305)**

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*
4. *Make suitable assumptions wherever necessary.*

PART-A

1. (a) What do you understand by perched aquifer? (1.5)
(b) What do you understand by saturation capacity? (1.5)
(c) Explain : Optimum water. (1.5)
(d) Define: G.C.A. (1.5)

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- (e) What do you understand by transpiration ratio? (1.5)
- (f) Define: Storage Coefficient. (1.5)
- (g) What is well-loss? (1.5)
- (h) What is canal lining? (1.5)
- (i) What do you understand by useful life of reservoir? (1.5)
- (j) What do you understand by land drainage? (1.5)

PART-B

- 2. (a) Discuss the engineering measures for flood control. (10)
- (b) Explain the use of Float type rain gauge. (5)
- 3. (a) Define the following terms (i) Percolation (ii) Base flow (iii) W-index. (5)
- (b) Derive an expression for steady radial flow in a confined aquifer. (10)
- 4. Define Duty and Delta and derive the relationship between them. Classify the spillway on the basis of their purpose. (15)
- 5. (a) Discuss with neat sketch, the various storage zones of reservoir. (5)
- (b) Explain Recuperation test to estimate the safe yield of an open well. (10)

- 6. (a) Discuss the various methods of controlling sedimentation of reservoirs. (10)
- (b) Explain Darcy's law and give its limitations. (5)
- 7. (a) Explain how the elevation area curve and elevation capacity curve are prepared? What is the use of this curve in reservoir planning? (10)
- (b) Discuss the measures to be adopted for water conservation and augmentation in water scarce regions. (5)