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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)**B.Tech III Year II Semester Regular Examinations May 2019****WATER RESOURCES ENGINEERING-II**

(Civil Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

**UNIT-I**

- 1 a What is a canal fall? How do you select the location of a canal fall? 3M  
b Explain the procedure for designing of the Sarda type fall. 9M

**OR**

- 2 a What are the functions of a Head regulator and a Cross-regulator? 4M  
b Explain the difference between Aqueduct and Syphon Aqueduct with neat sketches. 8M

**UNIT-II**

- 3 a Explain the factors to be considered in locating a stream gauging site. 6M  
b Explain the 'Area-Velocity method' for the measurement of discharge. 6M

**OR**

- 4 a Sodium dichromate solution with a concentration of 25 mg/c.c. is introduced into a stream at a rate of 1.5 liters / minute. The samples collected at a downstream section sufficiently far away indicated an equilibrium concentration of 0.001ppm. Determine the discharge in the stream. Assume no initial concentration of Sodium dichromate in the stream. 6M  
b Explain the method of measuring the velocity at a point in a stream using a current meter. 6M

**UNIT-III**

- 5 a Explain the classification of rivers. 7M  
b What is 'meandering'? What are the causes of meandering? 5M

**OR**

- 6 a What are the objectives of river training? 3M  
b Describe the various types of groyne used for river training. 9M

**UNIT-IV**

- 7 a Explain the various zones of storage in a reservoir. 7M  
b On what factors does the selection of the site of a reservoir depend? 5M

**OR**

- 8 a Explain the 'mass curve method' that can be used for determining the reservoir capacity for fulfilling a given demand. 7M  
b How do you estimate the probable life of a reservoir? 5M

**UNIT-V**

- 9 a What is a dam? Distinguish clearly between rigid and non-rigid dams. 4M  
b Discuss, with illustrations, the physical factors that govern the selection of type of dam. 8M

**OR**

- 10 a Discuss in detail, the various modes of failure of a gravity dam. 8M  
b Explain the practical profile of a gravity dam with a neat sketch. 4M

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