ASSIGNMENT-5

*CHAPTER -5--**Cross Drainage Works***

Semester:6th, B.Tech.
Department: Civil Engineering

Question1. Design an aqueduct for the following data. Design the transitions by Mitra's method.

Canal:

Full supply discharge = 35 cumecs

Full supply level = 200.0 m

Canal bed level = 198.50 m

Canal bed width = 22 m

Depth of water = 1.5 m

Side slopes = 1.5H: 1V

Drainage:

High flood discharge = 350 cumecs

High flood level = 196.50 m

Bed level = 193.50 m

General ground level = 199.00

Constant depth in transition = 1.50 m, Flumed width = 12m

Assume the following parameters:

Manning's rugosity coefficient = 0.015, Splay in contraction transition = 2:1

Splay in expanding transition = 3:1, Lacey's silt factor = 1.0

Free board in canal = 0.50

The superstructure consists of an RCC trough.

Question2. Design a syphon aqueduct if the following data at the crossing of a canal and drainage are given:

Discharge of canal = 40 cumecs

Bed width of canal = 30 m

Full supply depth of canal = 1.6 m

Bed level of canal = 206.4 m

Side slopes of canal = 1.5 H: 1V

High flood discharge of drainage = 450 cumecs

High flood level of drainage = 207.0 m

Bed level of drainage = 204.5 m

General ground level = 206.5 m.

Question3. Design a suitable cross-drainage work, given the following data at the crossing of a canal and drainage.

Irrigation Canal:

Full supply discharge = 300 cumecs

Full supply level = 196.5 m

Canal bed level = 194.9 m

Canal bed width = 28 m

FSD = 1.6 m

Side slopes = 1.5H: 1V

Natural Drainage:

High flood discharge = 145 cumecs

High flood level = 200.0 m

Drainage bed level = 198.1 m

Question4. Design a suitable cross-drainage work, given the following data:

Irrigation Channel:

Full supply discharge = 354 cumecs

Bed width = 24 m

Full supply level = 207.60 m

Canal bed level = 201.4 m

Side slopes = 0.5H: 1V

Natural Drainage:

High flood discharge = 600 cumecs

Drainage bed level = 203.6 m

High flood level = 206.3 m

Note: Prepare the above assignment within one week i.e. upto 12 th. July-2020. Keep it ready with you, You may have to submit it when asked within a short notice of time.