Note: Attempt all questions. Answer of the given questions must be uploaded within 06 hours after uploading of question paper. No answer sheet will be considered after given time period.

Q No 1: CLO-I (05+10)

a. Differentiate between culvert and causeway.

b. Define cross drainage work. Why it is necessary? Explain different types of cross drainage work in detail.

Q No 2: CLO-I (05+05)

a. Differentiate between weir and barrage.

b. Define Reynod's number. What will be the limit of reynold's number for laminar, turbulent and neither laminar nor turbulent flow? Also define lower and higher critical velocity.

Q No 3: CLO-II (05+10)

a. Draw neat sketch of barrage showing its different components.

b. How would you predict/analyze maximum or, equilibrium scour depth based on experimental formulas?

Q No 4: CLO-III (10)

A box culvert is to be designed having inside dimensions 15ft.*15ft. The culvert is subjected to L.L of 1.5 kip/ft^2 and superimposed D.L of 300 lb/ft^2. Unit weight of soil is 100 lb/ft^3. Angle of repose is 30^0. Use 1:2:4 concrete and fy=60 ksi steel. Design the box culvert.

"Good Luck"

Note: Avoid copy paste from one another as your paper will also be check for plagiarism.