Department of Civil Engineering, NIT Hamirpur (H.P.)
End Term Examination December-2022
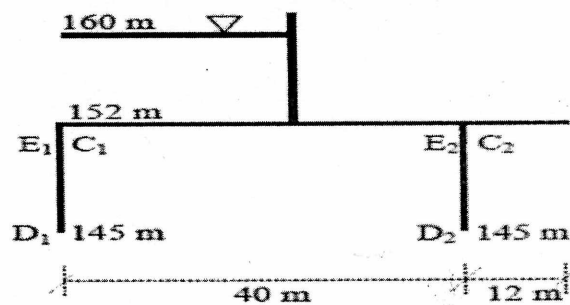### CE 411 Design of Hydraulic Structures

Time: 3 Hr   Max Marks: 50

Part-1 All Questions Carry 5 marks

Q1. Elaborate the Bligh's creep theory. Also write the assumptions and limitations of the theory.

Q2. Define the useful life of a reservoir and discuss the parameters considered while designing the useful life of reservoir.

Q3. Using Khosla's theory, determine the pressure at C1 with interference correction

Q4. How will you categorize the types of cross drainage works. Also, discuss the necessity of cross drainage works.

Q5. Explain the various causes of failures of a Gravity Dam.

Q6. Explain the need for installing energy dissipators. Also, classify the types of energy dissipators installed in a spillway.

Part-2 All Questions Carry 10 marks

Q7. Elaborate with the help of a diagram

   a. Ogee Fall **b.** Stepped Fall **c.** Trapezoidal Notch Fall **d.** Sarda Fall **e.** Rapid Fall

Q8. Draw a neat sketch and describe the following components of an earthen dam-

   a. Upstream Blanket **b.** Drainage Filter **c.** Riprap **d.** Core Wall **e.** Transition Filter