CIVIL ENGINEERING DEPARTMENT
The University of Lahore
Irrigation and Hydraulic

Time: 2:00 **Total Marks: 50**

Q. No.1 (a) An impervious floor of 16 m length, three sheet piles are provided. Two sheet piles are of equal depth for 3 m at the two ends. The middle sheet pile is of 4 m depth located in the centre (figure below). Calculate; **(15+10)**

i) Uplift pressure at key points C_1, E_2, D_1, C_2 and E_3.

ii) Also Calculate the Floor Thickness at point C_2 and E_2

Q. No. 2 Derive the following Relationship using Lacey's Regime Theory of Channel Design; **(7+8)**

i) S_b – f – R – Relationship

ii) Q – f – R – Relationship

Q. No. 3 Differentiate the following; **(10)**

i) Accretion and Retrogression

ii) Undermining and Uplift

iii) Hydraulic and Exist Gradient

iv) Critical Depth and Drowning Ratio

v) Discharge Intensity and the Peak Flood