**ME-231A**

**Practice Problem Set-1 Answers**

**P1.** Dimension of B= [L-1]

**P2.** Shear stress on upper plate, τyx=-4.56 N/m2 and shear stress varies linearly with y.



**P3.** Gauge pressure =4.41 kPa

**P4.** Pressure difference PA-PB=8900Pa

**P5.** Total pressure drop=171lbf/ft2 and pressure drop due to friction=392lbf/ft2.

**P6.** ∆h=0.193m

**P7.** Force, F=38750N and centre of pressure at X=0.615m.

**P8**. Depth h=2.52m.

**P9.** h=0.152m

**P10.** FH=97.9MN, FV=153.8MN, CP is 10.74m to the right and 3.13m up from point A.

**P11.** FA=111KN

**P12.** FH=370KN, FV=416KN, resultant F=557KN and α=48.3ᵒ

**P13.** Volume V=2.52L, n=6 weights

**P14.** (a) MB=29.1Kg (b) Submerged length =0.323m and Force F=6.1N

**P15.** F=159.4 N

**P16.** Position is slightly unstable and MG=-0.007m