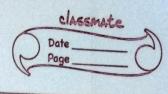
SNUBHAM GUPTA classmate 180749 1/ ut less the flow rate (Q2) = 282 m3/h = 0.0878 m3/s mining gas velocity = 10 m/s area of duct at 10m/s = 0.078 mc 70.6078 m² duct onen = 0.5 D x 0.2 D = 0.0078-m2 = 0.01D = 0.0078 m2 D= 0.078 m<sup>2</sup> D= 0-28m The standard design diante is 0.203m and have me are getting 0.28 mm, both of the are comparable serve use a single high efficiency ayolar separator

Page desity of gas at 100°C 28 × 275 = 0.915 hg/m3 visionaly of N2 at 150°C = 2.1 ×10-5 N. s/m now we will calculate the scaling fait xaly facta = (0.28) 3 x (223) , (2000) x 21 (0.003) (282) 2050) 1.81 = 1.533 collected. - 9.9 32-6 99 750 10 97 29.35 SO-40 40-50 15 22-83 95 14.24 99 16-31 10 9.4 20-20 9.78 92 20-10 23 4.89 10-5 86 17-1 5-2 2-28 70 3.5 2-0 0.5 0-65 10 overall 87.45 collection efficiency



fressure drop area of ilet dut A, = 0.10'=

cyclone surpre area As = TT 40'L. te = 0.005 ψ = 0.05× 4πgx = 0.628 12 0 - (-2)D 0-9, - 1.8 -. \$ = 0-9 fro pressur drop U, = 282 - 1 2600 6.10-3600 01×0.28)-10 m/s area of enit pipel = IT (0-SD) 2 11 (0.14)2

2600 0.01S = 5.22 m/2

