

國立中正大學九十四學年度碩士班招生考試試題

系所別：機械工程學系-丙組

科目：熱力學

第 2 節

第 2 頁，共 5 頁

4. Air enters an insulated diffuser operating at steady state with a pressure of 1 bar, a temperature of 300 K, and a velocity of 250 m/s. At the exit, the pressure is 1.13 bar and the velocity is 140 m/s. Potential energy effects can be neglected. Using the ideal gas model (data is shown in the attached ideal gas Table), determine
- (a) the ratio of the exit flow area to the inlet flow area, $A_2/A_1 = ?$ (5 %)
- (b) the exit temperature, T_2 , in K. (5%)

