



CIVL3206 Steel Structures 1: Semester 2, 2006

Name: _____ Student Number: _____

- 1) **(10 Marks)** A 410UB53.7 in Grade 300 steel is used to construct a 6 m long simply supported beam. There is a central point load P acting at midspan. Given that there is full restraint at the end supports only, calculate the maximum value of P permitted for strength design.

- 2) **(5 marks)** Table 5.6.1 of AS 4100 shows that for a uniform BMD the term $\alpha_m = 1.0$, whereas for a parabolic BMD, 0 at each end and maximum in the middle $\alpha_m = 1.13$. Use these two cases to **explain what α_m accounts for** when determining member moment capacity ϕM_b .

- 3)** (5 Marks) Discuss potential pros and cons for using a UB section or a similarly dimensioned RHS in a bending application. (Consider the different geometric properties that affect bending capacity).