

Department of Geomatics
451-337 Satellite Positioning and Geodesy
Mid-Semester Test 2005

Attempt to answer all questions
All questions are worth 10 marks

Question 1 (*Geodetic Coordinates and Reference Frames*)

- (a) In the context of transforming from AGD66/84 to GDA94, explain what distortion is. *(5 marks)*

- (b) How can a distortion component be incorporated in to a transformation model? *(5 marks)*

Question 2 (*Introduction to GPS*)

Give a full description of the role and operation of the GPS Ground Control Segment. *(10 marks)*

Question 3 (*Code Based GPS Positioning*)

- (a) Describe the rationale behind differential code-based GPS positioning. *(5 marks)*

- (b) Explain and illustrate the pseudo-range correction method of DGPS. *(5 marks)*

Question 4 (*Miscellaneous*)

- (a) What is geodetic datum *realisation*? *(3 marks)*

- (b) Draw and annotate a diagram to illustrate what happens to orthometric height under conformal transformation. *(3 marks)*

- (c) Describe in detail the satellite clock error and explain options for how the influence of this error can be minimised in GPS positioning. *(4 marks)*

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