SECTION A

Question One

1.1 Robertson et al. (1995) in the chapter dealing with Cartographic abstraction note that “Once cartographers have selected features and attributes for mapping, they are ready to move to the next step – generalization” (pg. 450). Identify the five concepts of generalization as outlined by Robertson et al (1995) and discuss their importance to cartography and map design.

(20 marks)

1.2 List the four levels of measurement of geographical variables.

(5 marks)
1.3 Using illustrations, describe a raster data model and highlight some of the advantages and disadvantages of using data in this format. (10 marks)

1.4 Projections distort the earth, but can preserve certain features on a map. Name and describe two properties that preserve certain shapes of displayed features. (4 marks)

1.5 Using illustrations, what is the difference between exact and inexact interpolators? (5 marks)

1.6 The illustration below show input vector layer A, B and C. The combinations of these layers are used to perform three vector overlay operations. **Redraw (in your booklet)** and shade in the following expressions: (6 marks)

- a. A and C
- b. (A and B) or C
- c. A and (B or C)

1.7 Briefly explain the three salient aspects you would expect in any definition of Remote Sensing. (5 marks)

1.8 Using relevant examples, explain the complementarity between ground based and remotely sensed data in a remote sensing process. (10 marks)

1.9 Briefly explain the three factors that affect soil reflectance. (10 marks)
Question Two

2.1 Discuss the Rights and Responsibilities of a cartographer in terms of map compilation. (10 marks)

2.2 Longley et al. (2005) provides a brief account of the history of GIS. Using this account, briefly outline the history of GIS. (15 marks)

SECTION B

Question Three

Answer ONE of the following questions

3.1 With reference to case studies, discuss and critically assess the applications of GIS in environmental management. (50 marks)

Or

3.2 Explain the interaction between the three segments that make up a GPS and the possible sources of error in identifying a location on the ground. (50 marks)

Question Four

Answer ONE of the following questions

4.1 Outline and discuss, using examples where appropriate, the history of map lettering and the functions of letters on a map. (50 marks)

Or

4.2 Using an appropriate illustration, describe the remote sensing process. (50 marks)