



# **THE KENYA POLYTECHNIC**

## **SURVEYING & MAPPING DEPARTMENT**

### **HIGHER DIPLOMA IN LAND SURVEY**

#### **END OF YEAR I EXAMINATIONS**

**NOVEMBER 2006**

#### **CARTOGRAPHY**

**3 HOURS**

#### **INSTRUCTIONS TO CANDIDATES:**

You should have the following for this examination:

Answer booklet

Calculator/Mathematical tables

Answer any FIVE of the following EIGHT questions.

All questions carry equal marks and the maximum marks for each part of a question are as shown.

This paper consists of 3 printed pages.

1. (a) Describe map projections with reference to the following:
  - (i) Properties (ii) Aspects (15 marks)
 (b) Explain how the type of a map would influence the choice of a map projection. (5 marks)
2. (a) Describe the procedure for the preparation of Preliminary Index Diagram (P.I.D) and state information shown on a completed P.I.D. (12 marks)
 (b) List the differences between a cadastral survey plan and Registry Index Map (R.I.M). (8 marks)
3. Explain the following with reference to graphic map design:
  - (i) Legibility (ii) Visual contrast
  - (iii) Visibility (iv) Balance
  - (v) Figure/ground (20 marks)
4. (a) Using illustrations, explain the relationship between additive and subtractive primaries of colour. (4 marks)
 (b) Explain the following variables of colour:
  - (i) Hue (ii) Value
  - (iii) Saturation (8 marks)
 (c) Which of the above variable(s) would you apply for the following maps?
  - (i) Land use/Land cover map of Kericho town
  - (ii) Vegetation cover map of Mt. Kenya
  - (iii) Kenya Population Density Map 1999
  - (iv) Rainfall map by Isopleth
 Give reasons for your choice in each case. (8 marks)
5. Outline the factors to be considered in the design of a map. (20 marks)
6. Write short notes on each of the following map elements in the context of map design:
  - (i) Scale (ii) Projection
  - (iii) Colour (iv) Symbolization
  - (v) Layout (20 marks)

7. (a) Explain the following giving ONE example in each case:
- (i) Cadastral plan
  - (ii) Topographic map
  - (iii) Thematic map
  - (iv) Atlas
  - (v) Special purpose map
- (10 marks)
- (b) Outline THREE main uses of photo/image maps. (4 marks)
- (c) Outline any SIX uses of Topographic maps. (6 marks)
8. (a) With the aid of a diagram, explain the cartographic communication system. Include the following in your diagram and explanation:
- (i) Source (sender)
  - (ii) Encoder
  - (iii) Channel
  - (iv) Decoder
  - (v) Recipient
- (15 marks)
- (b) Explain FIVE factors to be considered in the choice of map scale. (5 marks)