

2310/304
2312/304
CARTOGRAPHY
June/July 2021
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL
DIPLOMA IN PHOTOGRAMMETRY AND REMOTE SENSING
DIPLOMA IN LAND SURVEYING

CARTOGRAPHY

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Calculator;

Answer booklet.

*This paper consists of **EIGHT** questions.*

*Answer **FIVE** questions.*

All questions carry equal marks.

Maximum marks for each part of a question are as shown.

Candidates should answer the questions in English.

This paper consists of 2 printed pages.

Candidates should check the question paper to ascertain that both pages are printed as indicated and that no questions are missing.

Atop: $\frac{\text{Actual}}{\text{Aerial}} = \frac{8 \text{ km}}{2 \text{ cm}}$ Scale 1: 20,000
 $\text{Scale} = \frac{\text{Distance of map}}{\text{Ground distance}}$

1. (a) Explain the importance of cartographic generalization in map making. (4 marks)
- (b) Outline **eight** elements of map generalization. (16 marks)
 - Selection - Combination
 - Symbolization - Exaggeration
 - Simplification
2. Using illustrations in each case, explain **five** visual variables used to design symbols for representing of geographic data. (20 marks)
 - Point
 - Line
 - Area
 - Volumetric
3. (a) Distinguish between Basic and Derived maps. (8 marks)
- (b) Explain the measurement levels of cartographic symbols giving examples in each case. (12 marks)
 - Ordered
 - Qualitative
 - Quantitative
 - Point type
 - Area
 - Volumetric + use being in the advertisement
 - Line
4. (a) Using illustrations, Outline the characteristics of mapping text. (10 marks)
- (b) Outline three methods of showing scales on maps. (6 marks)
 - Statement scale
 - Written scale
 - Representative fraction
- 2km (c) A road of 2 km in length measures 8 cm on an aerial photograph. Calculate the length of the road on a map whose scale is 1:50,000. (4 marks)
5. * (a) Using illustrations, explain the breakdown of 148/F Topo sheet to 1:2,500 Topo Cadastral series, stating the sheet dimensions at each stage. (20 marks)
6. (a) State **five** reasons for map revision. (5 marks)
 - It helps in updating the map
 - helps in keeping the information upto date
- (b) Outline **three** different types of map revision. (6 marks)
 1. Quick revision
 2. Complete revision -> aims at updating all the changed
 3. Partial revision -> aims at updating some selected and changed parts in map
- (c) Describe the procedure of producing a revised map. (9 marks)
7. * (a) State **four** reasons for preparing a proof copy. (4 marks)
- (b) Given a right reading original on a film positive, use illustrations to describe the process of preparing a printing plate. (16 marks)
8. (a) Explain the methods of producing the following graphic images: (8 marks)
 (i) positive; - It is an image which is opaque to light on a transparent background
 (ii) negative; - It is an image that allows the transfer of light on background which is opaque to light
 (iii) right reading; - It is an image that reads from left to right on the emulsion side
 (iv) mirror reversed. - It is an image on the top side of the material that can only be read by viewing through the image.
- (b) Describe the following types of maps with reference to map compilation: (8 marks)
 (i) basic;
 (ii) derived. - example, heterogeneous, homogeneous
- (c) State **four** types of perception properties of visual variables. (4 marks)
 - Size - The importance of the feature
 - Style
 - Placement

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