

UNIVERSITY OF SWAZILAND
DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL SCIENCE AND
PLANNING

RE-SIT EXAMINATION, JULY 2017

B.A, BSc., BASS, B.Ed.

TITLE OF PAPER: INTRODUCTION TO ELEMENTARY
SURVEYING & CARTOGRAPHY

COURSE NUMBER: GEP211 / GEP213

TIME ALLOWED: THREE (3) HOURS

INSTRUCTIONS:

- 1. ANSWER THREE QUESTIONS**
- 2. QUESTION 1 IS COMPULSORY**
- 3. ILLUSTRATE YOUR ANSWERS WITH**
EXAMPLES AND CLEARLY DRAWN DIAGRAMS
WHERE APPROPRIATE

ALLOCATION OF MARKS: QUESTION 1 (COMPULSORY) CARRIES
40 MARKS, WHILE THE REST CARRY
30 MARKS EACH

THIS PAPER SHOULD NOT BE OPENED UNTIL PERMISSION IS
GRANTED BY THE INVIGILATOR

**GEP 211/GEP213: INTRODUCTION TO ELEMENTARY SURVEYING &
CARTOGRAPHY – JULY 2017**

SECTION A: COMPULSORY

Question 1

- a) Define map projection. (2 marks)
- b) Globes are said to portray the ideal nature of the earth. Discuss the inherent problems of globes that justify the wide use of map projections to produce conventional maps. (20 marks)
- c) Outline the conditions that an ideal distortion-free map must satisfy. (8 marks)
- d) An area identified for a town development project on a map of scale 1: 50 000 was estimated using a 1cm² grid as 55.45 cm². Calculate the actual area on the ground of the development site in;
- i) Square metres (7 marks)
 - ii) Hectares (3 marks)
- (40 Marks)**

SECTION B: ANSWER ANY TWO QUESTIONS

Question 2

- a) Describe the principal divisions or classifications of surveying highlighting how they differ from each other. (15 marks)
- b) Outline the stages involved in the surveying process. (15 marks)
- (30 Marks)**

Question 3

- a) Describe the basic characteristics of maps. (9 marks)
- b) Discuss the general cartographic rules used for positioning lettering for the following;
- i) Areal features (7 marks)
 - ii) Linear features (7 marks)
 - iii) Place features (7 marks)
- (30 Marks)**

Question 4

- a) Define the following terms:
- i) Surveying (2 marks)
 - ii) Benchmark (2 marks)
 - iii) Geoid (2 marks)
 - iv) Levelling (2 marks)
 - v) Area scale (2 marks)
- b) Outline how you would go about setting up a surveyor's level to take a measurement at a surveying station. (10 marks)
- c) Explain how EDM instruments and GPS can be used in surveying and mapping. (10 marks)
- (30 Marks)**

Question 5

- a) Explain the following classes of symbols, highlighting two examples of uses in each case;
- (i) Point-emphasising symbols (5 marks)
 - (ii) Line-emphasising symbols (5 marks)
 - (iii) Area-emphasising symbols (5 marks)
- b) Discuss any three primary visual variables. (15 marks)
- (30 Marks)**