



FACULTY OF ENGINEERING AND THE ENVIRONMENT

DEPARTMENT OF GEOMATICS AND SURVEYING

MINE SURVEYING AND GIS

EMI 2208

Final Examination Paper

MAY/JUNE 2022

This examination paper consists of 4 printed pages

Time Allowed: 3 hours

Total Marks: 100

Examiner's Name: Miss B. Mwabvu

INSTRUCTIONS

1. Answer all 4 questions
2. Each question carries 25 marks
3. Use of calculators is permissible, but programmable calculators are not allowed in the exam

QUESTION 1

(a) Using different diagrams for each scenario, briefly explain and show the following scenarios:

(i) Accurate and Precise

(ii) Accurate and Not Precise

(iii) Not Accurate and Precise

(iv) Not Accurate and Not Precise

(8marks)

(b) Giving examples, Write short notes on the following:-

(i) Blunders

(ii) Random Errors

(iii) Systematic Errors

(9marks)

(c)(i) A distance of 210.380m was measured with a steel band of normal length 30m. On standardizing the band it was found to be 30.002m. Calculate the correct measured distance assuming the error is evenly distributed throughout the tap.

(8marks)

QUESTION 2

(a)(i) What do you understand by the phrase “**from the Whole to the Part**”?

(3marks)

(ii) Give and explain any other two principles of Surveying.

(4marks)

(ii) Give and explain the **FOUR** branches of Surveying.

(8marks)

(b) Differentiate between plane Survey and Geodetic Survey

(6marks)

QUESTION 3

(a)(i) Define the term levelling and state the aim of a levelling exercise. **(5marks)**

(ii) Compare and contrast 2 methods of levelling reduction stating advantages and disadvantages of each. **(10marks)**

(b) Complete the Table below (10marks)

Station	BS	IS	FS	Rise	Fall	RL
1	X					150.00
2		2.457			0.827	X
3		2.400		X		X
4	2.697		X		X	148.070
5	X		2.051			148.716
6		2.500				149.784
7		2.896			X	149.388
8		X			0.124	X
9			2.672			149.612

QUESTION 4

(a) Distinguish between a Closed traverse and an open traverse.

(5marks)

(b) The Horizontal Angles at the stations of a closed traverse ABCDEA were observed as given in the table. Using the horizontal distances given calculate the coordinates of other stations given those of station A being, $Y = 1000.00\text{m}$ and $X = 2000.00\text{m}$.

(20marks)

Hz. Angle	Observation		Line	Hz. Distance
ABC	120.25.00		AB	155.00m
BCD	149.33.50		BC	200.00m
CDE	95.41.50		CD	249.00m
DEA	93.05.50		DE	190.00m
EAB	81.11.50		EA	445.00m