

DEPARTMENT OF SURVEYING AND GEOINFORMATICS
SCHOOL OF ENVIRONMENTAL TECHNOLOGY
FEDERAL UNIVERSITY OF TECHNOLOGY MINNA
FIRST SEMESTER EXAMINATION FOR 2018/2019 SESSION
COURSE CODE/TITLE: SVG 213 (BASIC SURVEY COMPUTATION)
INSTRUCTION: Answer question one (1) and any other two questions
TIME: 2 HOURS

- 1a. Define traversing and state its application.
- b. A closed traverse has the following lengths and bearings. Compute the closing error and correct the traverse by Bowditch method. Outline the formula used for the computation

LINE	LENGTH (m)	BEARING
AB	160	226°
BC	190	310°
CD	200	40°
DA	180	140°

- 2a. With the aid of relevant diagram explain differential leveling
- b. The following is a page of a level field book. Fill in the missing readings and calculate the reduce levels of all points. Apply the usual checks and show your workings

STATION	BS	IS	FS	RISE	FALL	RL	REMARKS
1	3.250					RL1	B.M
2	1.755		X1		0.750	RL2	CP
3		1.950			X2	RL3	
4	X4		1.920	X3		RL4	
5		2.340		1.500		RL5	
6		X5		1.000		RL6	
7	1.850		2.185		X10	250.000	CP
8		1.575		X8		RL8	
9		X6		X9		RL9	
10	X7		1.895		1.650	RL10	CP
11			1.350	0.750		RL11	LAST POINT

- 3(a) With the aid of a well labeled diagram explain the term intersection
- (b) Use the data below to determine the coordinates of point R using solution of triangle method

STATION	E(m)	N(m)
P	16824.104	13408.527
Q	15911.200	11958.688

$\angle QPR = \alpha = 38^\circ 56' 16''$ $\angle PQR = \beta = 50^\circ 19' 35''$

- 5a. The following table gives the corrected latitudes and departures in meters of the sides of a closed traverse PQRS. Compute its area by:
- Latitude and meridian distance (M.D) method
 - Latitude and double meridian distances (D.M.D) method
- b. What is the significance of area determination?