



**DAMIETTA UNIVERSITY
FACULTY OF ENGINEERING**



**PROGRAM/
YEAR**

**1ST YEAR
ELECTRICAL POWER
ENGINEERING**

SEMESTER

FIRST

Course title:

Civil Engineering

**Code
CIV119**

**Sheet
(2)**

Surveying

(Q:1) Define the following:

Back sight (BS) – Fore sight (FS) – Intermediate sight (IS) – Bench mark (B.M.)

(Q:2) The following level line was carried out along the center line of an area with a uniform slope, compute the elevation of the rod stations if the elevation of the last point is 200 m.

0.87	1.65	2.62	3.38	4.31	1.03	1.99
2.35	3.10	4.10	0.60	1.60	2.35	3.85

(Q:3) During a leveling process, the readings below were taken on circular parcel of land with radius 500 m where the first reading on B.M. (A) with reduced level 12.125 m. The readings as follows:

2.542	1.348	1.754	(1.975)	1.541	(2.784)	1.648
1.359	0.847	(0.758)	1.258	1.482	0.954	

- The readings between brackets were fore sights.
- The leveling end on the same B.M.(A).

Find: the reduced level of all points and calculate the value of errors and show if it is allowable or not.

(Q:4) During a leveling process, the readings below were taken. If the level was shifted after the 5th, 9th and 14th readings and the elevation of the 8th point was 45 m, compute the elevations of the rod stations.

1.36	4.19	3.75	2.87	1.51	1.64	3.78	1.29
3.54	3.75	2.65	1.95	3.16	2.67	3.97	3.63

(Q:5) A steel tape of standard length 50 m at 70°C was used to measure the line AB. The measured distance was 800 m. The following being the slopes for the various segments of the measured line. Calculate the true length of the line AB if the mean temperature during measurement was 48°C and the coefficient of thermal expansion of the tape material is 6.5×10^{-6} per °C.

Segment length (m)	80	135	45	190	280	70
slope	2°20'	4°12'	1°06'	7°48'	3°00'	5°10'