FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF ENVIRONMENTAL SCIENCES
DEPARTMENT OF SURVEYING AND GEOINFORMATICS
COURSE TITLE: FUNDAMENTAL SURVEYING   CODE: EST 211   UNITS: 2
HARMATTAN SEMESTER 2018/2019 SESSION   TIME: 2HRS

INSTRUCTION: Answer question one and any other three questions

1a. In a hexagon with corners labeled A to F, calculate the interior angles of a traverse from the bearings of the lines given below: (14.5mks)

LINE	AB	BC	CD	DE	EF	FA
BEARING	55° 25'	99° 30'	159° 15'	239° 30'	282° 15'	336° 46'

1b. Briefly discuss three uses of plane surveying. (3mks)

2ai   What do you understand by the term "surveying"   (3.5mks)
2aii   Distinguish between Geodetic surveying and plane surveying   (5mks)
2b   Trace the historical development of surveying detailing the major achievements recorded during the Ancient ages, middle ages and modern era.   (9mks)

3. Discuss the working principle, use and care of the following surveying instruments:
   a. Optical square   6.5mks
   b. Abney Level   5.5mks
   c. The Chains   5.5mks

4a. List and explain 5 components of each of the following:
   i.   Prismatic Compass   (5 mks)
   ii.   Theodolite   (5 mks)
4b. Discuss the temporary adjustments carried out at every set up of a theodolite before observations are made. (7.5mks)

5a Briefly explain the term "Tacheometry"   (5mks)
5b. Discuss the working principle of leveling   (5mks)
5c. Define the following terms in levelling:
   i.   Foresight   (1.5mks)
   ii.   Backsight   (1.5mks)
   iii.   Benchmark   (1.5mks)
   iv.   Levelling Staff   (1.5mks)
   v.   Intermediate sight. (1.5mks)

6a. With the aid of diagram, differentiate between oblique offset and perpendicular offset (5mks)

6b. Distinguish between Compass surveying and theodolite surveying (5mks)

6c. Discuss the following terms used in chain surveying:

   i.   Survey Station   (2.5mks)
   ii.   Survey line   (2.5mks)
   iii.   Offsets   (2.5mks)

GRACE TO YOU