FACULTY OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
FIRST SEMESTER EXAMINATION (MARCH 2018)
2017/2018 ACADEMIC SESSION

HOD'S SIGNATURE

Instructions:

1) Answer questions 1, 2 and two others

2) **Time Allowed:** 2hrs 45mins

3) **SEVERE PENALTIES APPLY FOR MISCONDUCT, CHEATING, POSSESSION OF UNAUTHORIZED MATERIALS DURING EXAMINATION**

Course Title: Engineering Surveying and Photogrammetry I

Course Code: CVE 305

Elizade University, Ilara-Mokin

Department of Civil Engineering.
First Semester 2017/2018 Examination

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Instruction: Answer questions 1, 2 and 2 others.   Time allowed: 2hrs 45mins

Question 1 (30marks)

a)   Define surveying. (3marks)

b)   Itemise the purposes of measurement. (8marks)

c)   Explain the following terms:

       i.   Contour

      ii.   Contour lines

     iii.   Photogrammetry

     iv.   Air photograph

      v.   Scale. (5 marks)

d)   State the principles of surveying? (3 marks).

e)   Briefly explain the following as used in land surveying:

      a)   Back sight.

      b)   Intermediate sight

      c)   Fore sight

      d)   Bearing

      e)   True North (5 marks)

f)   List the advantages and disadvantages of:

      i.   Vertical air photograph.(2 marks)

     ii.   Oblique air photograph.(2 marks)

g)   What are the characteristics of contour lines? (2 marks).

Question 2 (30marks)

a)   What is leveling? (5 marks).

b)   State sources of errors in leveling. (5 marks)

The following consecutive readings were taken with a level along a continuously sloping ground at a common interval of 25metres:

A	B	C	D	E	F	G	H	I	J
0.450	1.200	1.875	2.905	3.685	4.500	0.520	2.150	3.205	4.485

The reduced level of the change point at location F is 250.000 while the TBM is 250.050.

c) Properly do the booking and compute the spotheights of each point

    i. Using Rise and Fall Method. (5 marks).

    ii. Repeat the process in c(i)using Height of Instrument Method(5 marks)

d) Find the gradient of the line joining the first and the last point (10 marks)

Question 3 (20 marks)

(a) What is chain surveying? (2 marks).

(b) List the equipment used in chain surveying. (4 marks)

(c) State the errors in chaining and taping.(6 marks)

(d) State three possible field problems in chain surveying and how each can be overcome. Illustrate with diagrams.(8 marks)

Question 4 (20 marks)

a) Define the following terms as they apply to compass surveying

    i. Bearing

    ii. Angle of declination

    iii. Meridian

    iv. Forward Bearing

    v. Back Bearing.(5 marks)

b) State the relationship between:

    i. Forward Bearing and Back Bearing. (2 marks)

    ii. True Bearing, Magnetic Bearing and Angle of declination. (2 marks)

c) Itemise sources of errors in compass surveying. (5 marks)

d) List the merits and demerits of compass surveying. (6 marks)

Question 5 (20 marks)

a) State two methods of calculating areas and volumes. (2 marks)

b) Calculate the area of a triangle with sides 64.7 m, 85.2 m and the included angle is 60^0 (5 marks)

c) Figure Q5 shows a series of perpendicular offsets taken from a transit line to a curved boundary line. These offsets were at 4 m apart and the all the other dimensions are in metres.
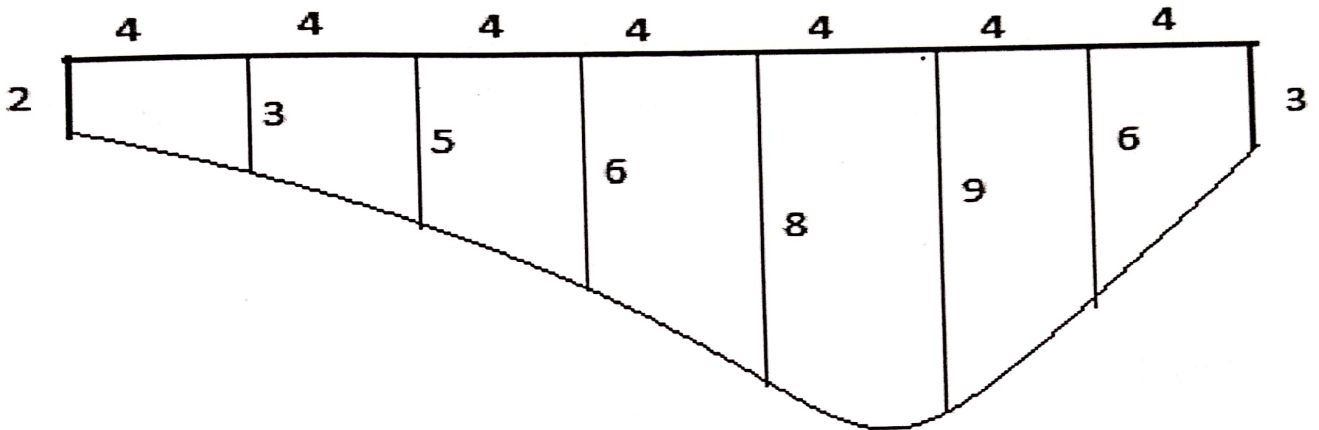

Figure Q5: A transit Line to a curved boundary line

Find the area included between the transit line and the curved line by:

i. Trapezoidal rule. (7 marks)

ii. Simpson's rule. (6 marks)

O.S.A (2018)