Enrollment No: _____   Exam Seat No: _____

C.U. SHAH UNIVERSITY
Summer Examination-2019

Subject Name: Surveying-I
Subject Code: 4TE03SUR1   **Branch: B.Tech (Civil)**
Semester: 3   **Date: 18/03/2019**   **Time: 02:30 To 05:30**   **Marks: 70**

Instructions:
   (1) Use of Programmable calculator & any other electronic instrument is prohibited.
   (2) Instructions written on main answer book are strictly to be obeyed.
   (3) Draw neat diagrams and figures (if necessary) at right places.
   (4) Assume suitable data if needed.

Q-1	**Attempt the following questions**	**(14)**
a)	What is magnetic declination?	(1)
b)	What is the error, if the difference between face left and face right observations of theodolite is 3′?	(1)
c)	Define representative fraction.	(1)
d)	What are the uses of planimeter?	(1)
e)	A building is situated on the far side of a river and is inaccessible. It can be located by…………………	(1)
f)	What is the angle of intersection of the two plain mirrors in the optical square?	(1)
g)	What is the principle of plane tabling?	(1)
h)	Which one is the most accurate method of orientation by the three-point method of plane tabling?	(1)
i)	Enlist the essential parts of a transit theodolite.	(1)
j)	Write the objective of box sextant.	(1)
k)	Define parallax.	(1)
l)	Name the instruments commonly employed in chain survey for setting right angle to a chain line.	(1)
m)	Define line of collimation.	(1)
n)	What is closing error in a compass traverse?	(1)

Attempt any four questions from Q-2 to Q-8

Q-2	**Attempt all questions**	**(14)**
A)	What is local attraction in compass? How you can predict the same?	**(7)**
B)	Explain characteristics of contour with the help of neat sketch.	**(7)**
Q-3	**Attempt all questions**	**(14)**
A)	Explain fundamental principles of surveying.	**(7)**
B)	Calculate the interior angle and draw the traverse:	**(7)**

LINE	AB	BC	CD	DE	EA
FB	70°30′	132°00′	56°00′	215°30′	310°00′

Q-4	**Attempt all questions**	**(14)**
A)	A traverse survey was conducted and the data obtained is given below in table. Find the magnitude and direction of the closing error if any.	**(7)**

Traverse data:

Line	AB	BC	CD	DA

Length	156.40	178.30	234.90	202.50
Bearing	78°42′	152°30′	251°20′	356°12′

B) Explain the principles and uses of abney level. **(7)**

Q-5   **Attempt all questions** **(14)**

A) Explain procedure to measure horizontal angle with repetition method. **(7)**

B) Describe various accessories required for plane table survey with neat sketch and write their use. **(7)**

Q-6   **Attempt all questions** **(14)**

A) Explain the method of carrying out temporary adjustment of the theodolite and write uses of theodolite. **(7)**

B) What is benchmark? Briefly explain different types of benchmark used in surveying. **(7)**

Q-7   **Attempt all questions** **(14)**

A) Describe any one method of orienting plane table. **(7)**

B) Explain the procedure for setting out a building. **(7)**

Q-8   **Attempt all questions** **(14)**

A) Explain briefly the instrument used in chain surveying. **(7)**

B) The following is the page of a level field book. Fill in the missing readings and calculate the reduced levels of all the points. Apply the usual checks. **(7)**

STA.	BS	IS	FS	RISE	FALL	RL	Remarks
1	2.150					450.00	BM 1
2	1.640		?	0.500		?	
3		2.345			?	?	
4	?		1.965	?		?	
5	2.050		1.825		0.400	?	
6		?		?		451.500	BM 2
7	1.690		?	0.120		?	
8	2.865		2.100		?	?	
9			?	?		452.250	BM 3