Enrollment No: _____   Exam Seat No: _____

C.U.SHAH UNIVERSITY
Summer Examination-2016

Subject Name : Surveying-I

Subject Code : 4TE03SUR1   **Branch :** B.Tech(Civil)

Semester : 3   **Date :** 28/04/2016   **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 surveying?	01
b)	What is the angle of intersection of the two plain mirrors in the optical square?	01
c)	What is ranging?	01
d)	What is the sum of interior angles of a closed traverse?	01
e)	What is local attraction in compass?	01
f)	What are contours?	01
g)	Draw contours for ridge line.	01
h)	Draw contours for overhanging cliff.	01
i)	What is traverse?	01
j)	What is magnetic Declination?	01
k)	Define line of collimation.	01
l)	What is bench mark?	01
m)	Define parallax.	01
n)	What is three-point problem in plane table survey?	01

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

Q-2	**Attempt all questions**	**(14)**
(a)	Discuss the classification of surveying based on purpose and nature of field.	05
(b)	A line was measured with a steel tape which was exactly 30 m long at 18° C and found to be 452.343 m. The temperature during measurement was 32° C. Find the true length of line. Take coefficient of expansion of the tape per ^{o} C = 0.0000117	05
(c)	Differentiate between plane and geodetic surveying.	04
Q-3	**Attempt all questions**	**(14)**
(a)	Explain with sketch the use of line ranger and cross staff.	05
(b)	Write a note on reciprocal ranging.	05
(c)	Differentiate between height of instrument method and rise and fall method.	04

Q-4   Attempt all questions   (14)
(a) Explain permanent adjustment of horizontal axis of theodolite.   05
(b) Explain principles and uses of pantograph.   05
(c) Explain any four characteristics of contour with the help of neat   04
   sketches.

Q-5   Attempt all questions   (14)
(a) What is closing error in a compass traverse? How is it adjusted   07
   graphically?
(b) The observed bearings of the traverse are given below. Find out included 07
   angles.

LINE	FB	BB
AB	70^0	250^0
BC	110^0	290^0
CD	160^0	340^0
DE	220^0	40^0
EA	300^0	20^0

Q-6   Attempt all questions   (14)
(a) Describe the method of orienting plane table by back sighting.   07
(b) Following is a page of level book. Fill in the missing readings and apply 07
   the usual checks.

Station	B. S.	I. S.	F. S.	Rise	Fall	RL
1	?					150.000
2		2.457			0.827	?
3		2.400		0.057		?
4	2.697		?		?	148.070
5	?		2.051	0.646		148.716
6		2.500		1.068		149.784
7		2.896			?	149.388
8		?			0.124	?
9			2.672	0.348		149.612

Q-7   Attempt all questions   (14)
(a) Explain the method of carrying out temporary adjustment of the   07
   theodolite.
(b) What is two point problem in plane table survey? How it is solved?   07

Q-8   Attempt all questions   (14)
(a) Explain step by step procedure to measure horizontal angle with   07
   reiteration method.
(b) Explain with sketches, the intersection method of locating a point by   07
   plane table survey.