Enrollment No:-_____ Exam Seat No:-_____

C.U.SHAH UNIVERSITY

Summer-2015

Subject Code: 4TE03SUR1 **Subject Name: Surveying-I**

Course Name: B.Tech (Civil) Date: 7/5/2015

Semester:III Marks: 70

Time:02:30 TO 05:30

Instructions:

1) Attempt all Questions of both sections in same answer book/Supplementary.
2) Use of Programmable calculator & any other electronic instrument prohibited.
3) Instructions written on main answer book are strictly to be obeyed.
4) Draw neat diagrams & figures (if necessary) at right places.
5) Assume suitable & perfect data if needed.

SECTION - I

Q-1	(a)	Differentiate between whole circle bearing (WCB) and reduced bearing (RB).	2
	(b)	Differentiate between magnetic declination and magnetic dip.	2
	(c)	Define True meridian.	1
	(d)	What is closing error in compass?	1
	(e)	What is ranging?	1
Q-2	(a)	Explain with sketch the use of line ranger and cross staff.	5
	(b)	The length of a chain line when measured with a 20m chain was found to be 1432m. But when a 30m chain which was 0.65m too short was used for the purpose, the line was found to be 1445m long. Find the error in 20m chain?	5
	(c)	Discuss difference between plane and geodetic surveying.	4

OR

Q-2	(a)	What is surveying? Explain uses of surveying.	5
	(b)	State and explain temporary adjustments of a dumpy level.	5
	(c)	Discuss difference between plane and geodetic surveying.	4
Q-3	(a)	The observed bearings of the traverse are given below. Find out included angles and correct angles.	7

LINE	FB	BB
AB	$12^0\ 30'$	$192^0\ 30'$
BC	$95^0\ 00'$	$275^0\ 00'$
CD	$110^0\ 30'$	$290^0\ 30'$
DE	$160^0\ 00'$	$340^0\ 00'$
EA	$310^0\ 30'$	$130^0\ 00'$

(b) What is local attraction in compass? How you can predict the same? 7

OR

Q-3 (a) Draw contours for (i) hill, (ii) valley, (iii) pond, (iv) ridge line, (v) over hanging cliff, (vi) steep slope, and (vii) saddle. 7

(b) Following are the staff readings observed with a level. First observation taken on TBM of RL. 175.00m. complete the field book and show necessary checks. 7

Station	B. S.	I. S.	F. S.	H.I.	R.L.	Remarks
1	2.225			?	?	B.M
2		1.605		?	?	
3	2.090		0.955	?	?	?
4		1.860		?	?	
5	0.600		1.260	?	?	?
6			0.985	?	?	

SECTION - II

Q-4 (a) Enlist the fundamental axis of theodolite 2

(b) Draw a neat sketch of theodolite. 2

(c) Write the statement of two-point problem. 1

(d) Enlist the various accessories of a plane table. 1

(e) What are the uses of planimeter. 1

Q-5 (a) Explain permanent adjustment of horizontal axis of theodolite. 5

(b) Define three-point problem and show how it may be solved by tracing paper method. 5

(c) Differentiate between: Bowditch's rule and transit rule 4

OR

Q-5 (a) Write short note on pantograph. 5

(b) Explain the terms related to theodolite : 5
Collimation line, Diaphragm, Consecutive co-ordinates, Departure.

(c) Differentiate between: transit theodolite and non-transit theodolite. 4

Q-6 (a) Explain step by step procedure to measure horizontal angle with repetition method. 7

(b) Draw part of main and vernier scale of theodolite you have used. Also calculate least count of it. 7

OR

Q-6 (a) Explain with sketches, the resection method of locating a point by plane table survey. 7

(b) Describe the method of orienting plane table by back sighting. 7