

Enrollment No: _____ Exam Seat No: _____

C. U. SHAH UNIVERSITY

Winter Examination-2019

Subject Name : Surveying-I

Subject Code : 4TE03SUR1

Branch: B.Tech (Civil)

Semester : 3

Date : 20/11/2019

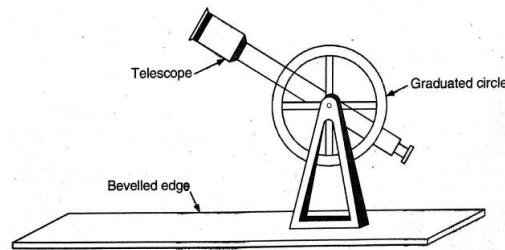
Time : 02:30 To 05:30

Marks : 70

Instructions:

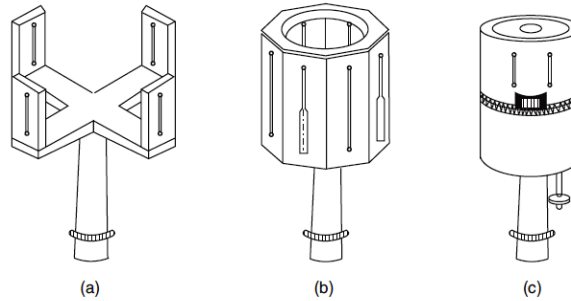
- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

- Q-1** **Attempt the following questions:** **(14)**
- a) Write the objective of box sextant. 1
 - b) What is magnetic declination? 1
 - c) Draw contours for saddle. 1
 - d) Define Representative Fraction. 1
 - e) Define the term Face right observation related to theodolite 1
 - f) What is theodolite? 1
 - g) Name the instrument shown in figure. 1



- h) What is surveying? 1
- i) What is the sum of interior angles of a closed traverse? 1
- j) What are contours? 1
- k) What is the principle of plane tabling? 1
- l) What are the uses of planimeter? 1
- m) Define levelling. 1
- n) Name the instrument shown in figure. 1





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

Q-2 Attempt all questions (14)

- a) The distance between two points on the ground was measured with a 20 m chain and was found to be 1800 m. The same distance was measured with a 30 m chain and found to be 1740 m. If the 20 m chain was 5 cm too short, what was the error in the 30 m chain? 7
- b) Explain characteristics of contour with the help of neat sketches. 7

Q-3 Attempt all questions (14)

- a) The bearings observed in traversing with a compass at a place where local attraction was suspected are given below: 7

Line	Fore Bearing	Back Bearing
AB	S 45° 30' E	N 45° 30' W
BC	S 60° 00' E	N 60° 40' W
CD	N 03° 20' E	S 05° 30' W
DA	S 85° 00' W	N 83° 30' E

At what stations do you suspect local attraction? Find the corrected bearings of the lines.

- b) Explain various obstacles in chaining and illustrate the procedure to solve one case in each obstacle. 7

Q-4 Attempt all questions (14)

- a) Discuss the classification of surveying based on; (a) instruments used, (b) methods used, (c) Purposes or objects, (d) nature of field. 7
- b) What is local attraction in compass? How you can predict the same? 7

Q-5 Attempt all questions (14)

- a) Describe various accessories required for plane table survey with neat sketch and also write their use. 7
- b) Explain the procedure for setting out a tunnel. 7



- Q-6 Attempt all questions (14)**
- a) Explain the method of carrying out temporary adjustment of the theodolite and also write uses of theodolite. 7
- b) Explain with sketches, the radiation method of locating a point by plane table survey. 7

- Q-7 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	156.4	178.3	234.9	202.5
Bearing	78° 42'	152° 30'	251° 20'	356° 12'

- b) Write short note on Abney level. 7

- Q-8 Attempt all questions (14)**
- a) Explain step by step procedure to measure horizontal angle with repetition method. 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	?	?	

