

**B.TECH. SEM -IV (CIVIL) 2014 COURSE (CBCS) : SUMMER -
2018
SUBJECT: SURVEYING**

Day: **Tuesday**
Date: **05/06/2018**

S-2018-2277

Time: **10.00 AM TO 01.00 PM**
Max. Marks: 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat diagram **WHEREVER** necessary.

- Q.1 a)** What is meant by Magnetic Declination and magnetic Dip. [05]
- b)** Explain with neat sketch chaining on sloping ground. [05]

OR

- Q.1** The following are the fore bearing and back bearing observed in running a compass traverse. [10]

Line	Fore bearing	Back bearing
AB	$46^{\circ} 10'$	$226^{\circ} 10'$
BC	$119^{\circ} 20'$	$298^{\circ} 40'$
CD	$169^{\circ} 30'$	$351^{\circ} 10'$
DA	$280^{\circ} 20'$	$99^{\circ} 20'$

- 1) State which station is affected by local attraction and by how much.
 - 2) Calculate correct FB and BB.
 - 3) Draw a neat sketch of corrected traverse showing corrected FB and BB.
- Q.2 a)** State methods of contouring explain any one method with neat sketch. [05]
- b)** What are the principle axes of dumpy level? State relation between them. [05]

OR

- Q.2** The following consecutive readings were taken with a level and 4m staff on a continuously sloping ground at a regular interval of 20m. [10]
0.770, 1.525, 1.925, 2.425, 2.995, 3.485, 1.110, 1.975, 2.360, 3.645, 0.930, 1.040, 1.635, and 2.520. The reduced level of the first point is 215.850m

- a) Rule out the page of level field book and enter above readings.
 - b) Calculate RL's of all the point by rise and fall method apply usual check
 - c) Calculate the gradient of the line joining first and last point.
- Q.3 a)** List any five parts of transit 20" Theodolite and write its function. [05]
- b)** Following are the latitudes and departures for closed traverse ABCDA compute the missing latitude and departure of side DA [05]

Line	latitude	departure
AB	-116.10	-44.40
BC	+6.80	+58.20
CD	+80.50	+17.20
DA	?	?

(P.T.O.)

OR

- Q.3 a) Describe the method of measurement of vertical angle with theodolite. [05]
Also give a specimen observation table.
- b) Calculate independent coordinates from following data show calculations [05]

Line	latitude		departure	
	N	S	E	W
AB		182.63	313.12	
BC	244.72		470.12	
CD	495.17			318.34
DE		268.70		388.46
EA		288.27		113.44

Assume Independent coordinate of A as 500, 500

- Q.4 Describe methods of prolonging a straight line with neat sketch by using transit theodolite. [10]

OR

- Q.4 To determine constant of a tachometer, the following observations were taken on a staff held vertically at a distance measured from the instrument [10]

Horizontal distance	Vertical angle	Stadia reading
70m	1° 0'	0.935 1.450 2.00
130m	2° 25'	1.140 1.950 2.800
190m	3° 00'	1.250 1.500 2.990

Find the mean of the constant given the additive constant 0.25.

- Q.5 Describe the method of setting out simple curve by Rankine methods of deflection angle also give the observation table for the same. [10]

OR

- Q.5 Calculate the ordinates at every 10m interval to set out a simple circular curve having long chord 200m and radius 300m. Illustrate your answer with neat sketch.

- Q.6 List the accessories used in plane table with neat sketch state function of each accessories used in plane table. [10]

OR

- Q.6 State the method of plane table survey and explain intersection method with neat sketch. What are the advantages of intersection methods over the radiation method?

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