

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2021-COURSE)
B. Tech. Sem - II CIVIL :SUMMER- 2022
SUBJECT : BASIC LAND SURVEYING

Day : Wednesday

Time : 10:00 AM-01:00 PM

Date : 3/8/2022

S-24041-2022

Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data **WHEREVER** necessary.
- 4) Use of **NON-PROGRAMMABLE** calculator is allowed.

Q.1 State the principle of surveying and explain it with neat sketch. **(10)**

OR

Q.1 The following bearings were taken in traverse survey conducted with a prismatic compass at a place where local attraction was suspected. At what station do you suspect local attraction? Find the correct bearings of the line? Also find true bearings if magnetic declination is $2^{\circ}30'$ E . **(10)**

Line	Fore Bearing	Back Bearing
AB	$44^{\circ}30'$	$226^{\circ}30'$
BC	$124^{\circ}30'$	$303^{\circ}15'$
CD	$181^{\circ}00'$	$1^{\circ}0'$
DA	$289^{\circ}30'$	$108^{\circ}45'$

Q.2 The following consecutive readings were taken with level, 3.870, 3.600, 2.850, 1.940, 0.900, 3.160, 2.865, 1.985, 2.135, 0.955 and 0.775. The level was shifted after the fifth and eighth readings. The first reading was taken on Bench Mark of RL 200.00 m use rise and fall method to calculate the reduced levels of all points and apply usual check. **(10)**

OR

Q.2 Define contour and explain methods of contouring with neat sketch. **(10)**

Q.3 Following table gives lengths and bearing of four sided of a five sided closed traverse PQRST. **(10)**

Line	PQ	QR	RS	ST	TP
Length	194.1	201.20	164.40	172.8	?
WCB	$85^{\circ}3'$	$15^{\circ}30'$	$285^{\circ}30'$	$195^{\circ}30'$?

OR

Q.3 Stepwise write procedure of measuring vertical angle with a theodolite in the field. Also draw the typical format of observation table for the same. **(10)**

P.T.O.

- Q.4** A tachometer was fixed with an analytic lens and having the value of constant 100 was used and the following observations were made on staff held vertical : **(10)**

Instrument Station	HI	Vertical Angle	Staff at	Staff Reading
P	1.50	+2°30'	M	1.20, 1.83, 2.46
P	1.50	-4°40'	Q	1.35, 1.85, 2.29

The RL of station M is 50.00 m. Calculate the RL of P and Q and distance PQ.

OR

- Q.4** What is meant by orientation? List method of orientation of plane table and explain any one with neat sketch. **(10)**

- Q.5** Explain various elements of simple curve with neat sketch. **(10)**

OR

- Q.5** The two straight meet at an apex angle 126° 48' and chainage 1190.00m. These straights are to be joined by simple circular curve of radius 300 m. Calculate data necessary for setting simple curve by method of offset from long Chord. **(10)**

- Q.6** Explain step by step procedure of setting out building with total station. **(10)**

OR

- Q.6** Describe setting out tunnel Centre line on surface. **(10)**

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