Civil

PRN:		Course Code :	UCE 302

Second Year B.Tech Civil End Semester Examination Winter 2023

Engineering Surveying

Day and Date: Thursday, 30/11/2023 Max Marks: **50**

Time : 10.30 am to 12.30 pm Duration: **02** hrs

Instructions: All questions are compulsory.

		Marks	Bloom's Level	CO
Q.1	**Attempt any two from the following**			
a)	Discuss relation between fundamental axis of dumpy level	06	L3	CO1
b)	Following data gives the observations with a dumpy level during reciprocal leveling operation. Find i) True reduced level of B. ii) Combined correction for curvature and refraction. iii) Error due to collimation.	06	L4	CO1

Instrument near	Staff readings on		Remarks
	A	B	
A	1.165	2.695	Dist. AB= 2.0 Kms
B	0.905	2.115	RL of A= 905.125 m

c)	Explain characteristics of contour lines	06	L4	CO1
Q.2	**Attempt any one from the following**			
a)	Explain following term (any 3) 1) Face left 2) Centering 3) Telescope Inverted 4) Swinging 5) Latitude 6) Departure	06	L3	CO2
b)	The following records are obtained in traverse survey, where the length and bearing of the last line were not recorded. Compute the length and bearing of line DA	06	L4	CO2

Line	Length	Bearing
AB	90.00	$31^0 24'$
BC	185.00	$110^0 36'$

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CD	63	$210^0 30'$
DA	?	?

C) Calculate the corrected consecutive coordinates using Bowditch's rule for the following 06 L4 CO2

Line	AB	BC	CD	DE	EA
Length (M)	1190	185	307	187	244
Bearing	N $23^0 40'$E	N $74^0 20'$W	S $64^0 40'$W	S $43^0 30'$E	N $87^0 10'$E

Q.3 **Attempt the following**

a) Discuss field methods for finding tachometry constant 06 L3 CO3

b) A tachometer was set up at station C which is between and in line of station A and Station B and following reading were obtained on staff held vertically Calculate Grade of line AB. Use constants 100 and 0(Zero) 07 L4 CO3

Inst Station	Staff Station	Vertical angle	Reading	Remark
C	A	$-8^0 40'$	1.550,1.850, 2.550	RL of Station A= 575.755m
C	B	+ $13^0 32'$	0.950, 1.750, 2.950	

OR

b) Calculate reduce level of the top of the tower from the following data. 07 L4 CO3

Instrument Station	Reading on BM	Vertical Angle
A	1.750m	14^0
B	2.355 m	10^0

R.L of B.M is 1050.0 m and observation are taken with the line of sight horizontal. Distance between AB 150 m point A ,B and the top of lower are in the same vertical plane

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Q.4	**Attempt the following**				
a)	Explain different components of simple circular curve with neat sketch		06	L3	CO4
b)	Find out all necessary data for setting out simple circular curve of radius 145 m. Deflection angle 55^0. Chainage of intersection point 865 m by ordinate from the long chord method		07	L4	CO4
	OR				
b)	Find out all necessary data for setting out simple circular curve of radius 100 m. Deflection angle 63^0. Chainage of intersection point 975 m by Two theodolite method. Assume peg interval 20 m and least of theodolite 20".		07	L4	CO4

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