PRN:		Course Code :	U13PC303

Second Year B.Tech Civil End Semester Examination Winter 2024

Engineering Surveying

000125

Day and Date: Wed 27 NOV 2024 Max Marks: **50**

Time : 10:30AM To 12:30PM Duration: **02** hrs

Instructions:

1. All questions are compulsory.

2. Assume suitable data wherever necessary and mention it clearly.

Q.1		**Attempt the following**	Marks	Bloom's Level	CO
	A)	The following offsets were taken at 15 m intervals from survey line 2.40, 3.85, 4.55, 5.60, 6.78, 7.10, 8.90, 9.40, 9.95, 8.75, 7.52, 6.85, 5.75, 4.98, 3.60 Calculate area by 1) The Mid ordinate rule. 2) the average ordinate rule	10	L4	CO1

OR

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 — 10 — L4 — CO2

Line	Length	Bearing
AB	100	$36^0 24'$
BC	210	$115^0 26'$
CD	95	$224^0 30'$
DA	?	?

OR

c) Find out all necessary data for setting out simple circular curve of radius 200 m. Deflection angle 47^0. Chainage of intersection point 3500 m by ordinate from the long chord method — 10 — L4 — CO3

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Q.2 **Attempt the following Question.**

a) Explain characteristics of contour lines 10 L3 CO1

OR

b) Calculate the corrected consecutive coordinates using Bowditch's rule for the following 10 L4 CO2

Line	AB	BC	CD	DE	EA
Length (M)	190	185	320	185	240
Bearing	N $26^0$40'E	N $74^0$20'W	S $62^0$30'W	S $42^0$30'E	N $89^0$30'E

Q.3 **Attempt the following**

a) 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) 10 L4 CO2

Inst Station	Staff Station	Vertical angle	Reading	Remark
C	A	- $10^0$20'	1.550,1.850, 2.550	RL of Station A= 600.230
C	B	+ $14^0$32'	0.950, 1.750, 2.950	

OR

b) Calculate reduce level of the top of the tower from the following data. 10 L4 CO2

Instrument Station	Reading on BM	Vertical Angle
A	1.650m	19^0
B	2.505 m	12^0

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R.L of B.M is 523.320 m and observation are taken with the line of sight horizontal. Distance between AB 125 m point A ,B and the top of lower are in the same vertical plane

Q.4		**Attempt the following**			
	a)	Explain different components of simple circular curve with neat sketch	10	L3	CO3
		OR			
	b)	Find out all necessary data for setting out simple circular curve of radius 110 m. Deflection angle 47^0. Chainage of intersection point 5000 m by Two theodolite method. Assume peg interval 20 m and least of theodolite 20".	10	L4	CO3
Q.5		**Attempt any two**			
	a)	Write a note on applications of Remote Sensing in Civil Engineering.	05	L3	CO4
	b)	Write short note on total station	05	L3	CO4
	c)	Explain different types of aerial photographs	05	L3	CO4
	d)	The scale of an aerial photograph is 1cm= 100 m The photograph size is 30 cm x 30 cm. Determine the number of photographs required to cover an area of 200 sq km if the longitudinal lap is 60% and the side lap is 35 %.	05	L3	CO4

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