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SARASWATI Institute of Technology
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Kharghar, Navi Mumbai - 410 210.

Department of Civil Engineering

Vision: "To impart quality technical education beneficial to industry and the society in the field of Civil Engineering.".

- **Mission:** ● To arrange academic and technical expertise**.**

  ● To improve the practical knowledge of the student as per current scenario of industry.

  ● To make the students socially and ethically responsible.

Assignment No :- 01 **Subject : Advanced surveying**

Topic Name :- Plane Table Surveying **Subject code: 22301**

Course Outcome : CO301.1

Q.1. State the principle of plane table survey.

Q.2. Describe the function of following accessories used in plane table survey

i) Telescopic Alidade
ii) Trough Compass
iii)Plumbing fork
iv) Spirit level.

Q.3. Compare Radiation and intersection method of plane tabling on any four points.

Q.4. Explain the orientation of plane table by back sighting.

Q.5. State methods of plane table surveying & explain traversing method.

Q.6. Explain with sketch intersection method of plane table surveying.

Q.7. State the situations where plane table survey is suitable.

Q.8. State any 4 advantages & 4 disadvantages of plane table survey.

Date of Submission :-
Assign By :- Ms. Nasreen Ansari

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Assignment No :- 02 **Subject : Advanced surveying**

Topic Name :- Theodolite Surveying **Subject code: 22301**

Course Outcome : CO301.2

Q.1. Describe the procedure for measurement of Deflection angle.

Q.2. Following are the length and Bearing of a closed Traverse PQRSP

Line	Length(m)	Bearing
PQ	210	35°
QR	300	155°
RS	160	220°.00
SP	?	?

Calculate the length and Bearing of line SP.

Q.3. Calculate the corrected consecutive co-ordinate for the following observation of traverse

Line	Length	Consecutive co-ordinate	
		Latitude	Departure
PQ	705	+655.19	–260.29
QR	952.5	+122.07	+943.99
RS	645	–628.47	+145.54
SP	844.30	–151.48	–830.80

Q.4. Find the length and bearing of line AB If two co-ordinate A and B as given below

Point	Co-ordinate	
A	870.0	777.00
B	1150.20	575.30

Q.5. The following angles were measured in running a closed traverse ABCDEA.
$\angle A = 87° 50' 20''$, $\angle B = 114° 55' 40''$, $\angle C = 94° 38' 50''$,

$\angle D = 129° 40' 40''$ and $\angle E = 112° 54' 30$ If the bearing of line AB is $221° 18' 40'$ ′, calculate bearings ofthe remaining lines.

Q.6. Define telescope inverted & telescope normal.

Q.7. State any four uses of transit theodolite.

Q.8. Explain the function of lower tangent screw, upper tangent screw, lower clamping screw & upper clamping screw while measuring horizontal angle using theodolite.

Q.9. Following are the latitudes & departures for closed traverse ABCDE. Compute the missing length & WCB of side EA.

Line	AB	BC	CD	DE	EA
Length	194.1	201.20	164.40	172.6	?
WCB	$85^0 30'$	$15^0 30'$	$285^0 30'$	$195^0 30'$	?

Q.10. Calculate independent co-ordinates of all the survey lines of the traverse :

Size	AB	BC	CD	DA
Length (m)	335	850	408	828
Bearing	$180^0 20'$	$90^0 20'$	357^0	365^0

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Assignment No :- 03 **Subject : Advanced surveying**

Topic Name :- Tacheometric Surveying **Subject code: 22301**

Course Outcome : CO301.3

Q.1. State the essential characteristic of tacheometer.

Q.2. Explain the principle of Tacheometry with the help of a neat sketch.

Q.3. Following observations were taken to determine the constants of tacheometer.

Station	Staff Station	Horizontal distance (m)	Vertical angle	Hair Readings	
				Lower	Upper
A	B	51.430	6°30′	0.900	1.420
A	C	18.065	2°20′	1.140	1.320

Q.4. A tacheometer fitted with anallatic lens was set up at station P & the following readings were obtained on vertically held staff.

Inst. Stn.	Staff Stn.	Vertical angle	Staff Reading
P	BM	-12°42′	0.220, 1.000, 1.780
P	Q	+9°36′	0.415, 1.240, 2.065

The RL of BM is 400 m, the constant of tacheometer was 100. Find the horizontal distance PQ & RL of Q.

Q.5. Following observations were made using tacheometer, find constants of given tacheometer:

Distance	50 m	100 m
Staff readings	1.20, 1.40, 1.60	1.25, 1.45, 1.65

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Assignment No :- 04 **Subject : Advanced surveying**

Topic Name :- Curve Setting **Subject code: 22301**

Course Outcome : CO301.4

Q.1. Define Curve & degree of curve.

Q.2. Describe the method of curve by using offset from long chord.

Q.3. Calculate the ordinate from long chord to set a circular curve at 12 m interval given that the length of long chord is 60 m and radius of the curve is 170 m.

Q.4. Apply knowledge of total station to prepare a contour map by describing its procedure.

Q.5. Draw a neat sketch of circular curve & show the following element :
Tangent length
Deflection angle
Apex distance
Length of long chord

Q.6.Calculate the ordinates at 25 m interval to set a circular curve having long chord of 300 m & versed sine of 10 m

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Assignment No :- 05 **Subject : Advanced surveying**

Topic Name :- Advanced Surveying Equipments **Subject code: 22301**

Course Outcome : CO301.5

Q.1. State any two advantages of total station over Dumpy level & Theodolite.

Q.2. State four component parts of digital Theodolite & state their purpose.

Q.3. State the principle of EDM with sketch.

Q.4. Describe the use of digital Theodolite for measurement of horizontal & vertical angle.

Q.5. Enlist the uses of total station in surveying.

Q.6. State the components of one-second micro-optic Theodolite.

Q.7. Describe procedure for setup of total station.

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Assignment No :- 06 **Subject : Advanced surveying**

Topic Name :- Remote Sensing, GPS and GIS **Subject code: 22301**

Course Outcome : CO301.6

Q.1. State the application of Remote Sensing in various fields.

Q.2. Write four applications of GIS.

Q.3. Differentiate between the Active System & Passive System of Remote Sensing.

Q.4. State the practical applications of remote sensing in civil engineering project.

Q.5. What is GPS? State the uses of GPS.

Q.6. State the principle of remote sensing.

Q.7. Explain working of GPS.