

P P SAVANI UNIVERSITY

Third Semester of Diploma Examination

November 2022

IDCV2040 Surveying

30.11.2022, Wednesday

Time: 10:00 a.m. To 12:30 p.m.

Maximum Marks: 60

Instructions:

1. Make suitable assumptions and draw neat figures wherever required.
2. Use of scientific calculator is allowed.

Q - 1	Attempt following questions (Any Five)	[05]	CO	BT
(i)	The least count of the vernier theodolite is ____ a) 30' b) 20' c) 20" d) 1'		1	1
(ii)	Theodolite is an instrument used for ____ a) Measurement of horizontal angles only b) Measurement of Vertical angles only c) Measurement of bearings only d) All the above		1	1
(iii)	Which of the following is not a case in trigonometric levelling ____ a) Base of object is accessible b) Base of object is inaccessible c) Base of object is at accurate position d) Base of object is inaccessible, station is not in vertical plane		2	1
(iv)	The index frame is ____ shaped frame. a) U b) V c) T d) A		1	2
(v)	Horizontal axis is also called ____ a) Trunnion axis b) Inner axis c) Outer axis d) Line of Sight		1	2
(vi)	A transit theodolite is one in which the line of sight can be reversed by revolving the telescope through 180° in a vertical plane. a) True b) False		1	2
(vii)	The imaginary level surface with reference to which vertical distances of the points are measured are called ____ a) Mean sea level b) Horizontal plane c) Reduced level d) Datum Surface		2	2
Q - 2 (a)	Explained uses of theodolite ?	[05]	1	1
Q - 2 (b)	Explained the term Closing Error with neat sketch?	[05]	3	2
OR				
Q - 2 (a)	Explain the temporary adjustment of theodolite?	[05]	1	1
Q - 2 (b)	Explain the Bowditch's rule for closing of traverse ?	[05]	1	2
Q - 3 (a)	Explain tacheometric surveying and its uses ?	[05]	2	2
Q - 3 (b)	A theodolite was set up at a distance of 150m from tower. The angle of elevation to top of the parapet was 10°8', while the angle of depression to the foot of the wall was 3°12'. The staff reading on the B.M. of R.L. 50.217 with the telescope horizontal was 0.88. Find the height of the tower & reduce level of the top of the parapet ?	[05]	2	4
OR				
Q - 3 (a)	Explain radiation methods of plane table surveying.	[05]	2	4
Q - 3 (b)	Explain temporary adjustment of plain table surveying.	[05]	2	2
Q - 4	Attempt any one/two.	[05]	2	1
(i)	List out the different system of tacheometric measurement.		2	1

(ii)	Explain the principle of stadia method ?		2	2
Q - 5	Attempt following questions (Any Five)	[05]		
(i)	Geodetic survey of india was done using _____ triangulation system		2	2
(ii)	The process of locating the instrument station occupied by plane table from stations whose positions have been already been plotted on plan knowns as _____		2	2
	a) Orientation b) Radiation c) Intersection d) Resection			
(iii)	The principle of plane table surveying is _____		2	2
(iv)	Which of the following is an indirect method of surveying		2	2
	a) Chain surveying b) Tacheometric surveying c) Countering d) All of the above			
(v)	Tacheometer has _____ number of horizontal hairs ?		2	2
(vi)	While taking observations for height and distances which of the following method or surveying used _____		2	2
	a) Plane table surveying b) Geodic Surveying c) Chain Surveying d) Compass Surveying			
(vii)	Full form of GPS ?		4	5
Q - 6 (a)	Explained the principles and uses of Geodetic Survey in briefly.	[05]	2	2
Q - 6 (b)	Enlist the types of EDM instruments. Explained anyone.	[05]	4	1
	OR			
Q - 6 (a)	Explained well-conditioned triangles and strength of figure.	[05]	3	6
Q - 6 (b)	Explained the Terms GPS.	[05]	4	2
Q - 7 (a)	Explain the classification of Curve ?	[05]	3	2
Q - 7 (b)	What is difference between transition curve and combined curve	[05]	3	1
	OR			
Q - 7 (a)	What are the uses of EDM?	[05]	4	2
Q - 7 (b)	Explain the uses of GPS ?	[05]	4	6
Q - 8	Attempt any one/two.	[05]		
(i)	Calculate mid ordinate, long chord, length of curve and tangent length from following data. 1. Deflection angle 40° Radius of curve = 200 m		3	4
(ii)	Calculate ordinates from 80 m long chord at 10 m interval for a curve with radius of 100 m.		3	4

CO : Course Outcome Number

BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create