P P SAVANI UNIVERSITY

Third Semester of B. Tech. Examination
November 2021
SECV2041 SURVEYING

17.12.2021, Friday   Time: 9:00 a.m. To 11:30 a.m.   Maximum Marks: 60

Instructions:
1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

Q - 1 (a)	Explain the orientation of plane table by back-sighting	[05]
Q - 1 (b)	Explain the intersection method adopted for plane table surveying	[05]

OR

Q - 1 (a)	Write brief note on equipment of plane table surveying	[05]
Q - 1 (b)	Write brief note on source of errors for plane table surveying	[05]
Q - 2 (a)	Explain briefly back sight, fore sight and intermediate sight.	[05]

Q - 2 (b) A tower of height 9m is erected to the building . From an instrument angle of elevation to top and bottom of tower are measured 12° & 9° respectively , if the angle of depression at plinth level of building is 4°, determine the height of building.   [05]

OR

Q - 2 (a) Explain all the three case of determining the elevation of a point by theodolite   [10]
(i) Case 1. Base of the object accessible
(iii) Case 3. Base of the object inaccessible, Instrument stations not in the same vertical plane as the elevated object.

Q-3 (a)	Write a brief note on Essentials of theodolite.	[05]
Q-3 (b)	Explain the temporary adjustment of theodolite.	[05]

OR

Q-3 Find closing error and corrected latitude and departure by Transit method for the following given below lines. Show calculation for each line.   [10]

LINE	LENGTH	WCB
AB	89.31	45.16
BC	219.76	72.08
CD	151.18	161.86
DE	159.10	228.71
EA	232.26	300.70

Q-4 Explain the setting out a building by Centre line method.   [05]

SECTION – II

Q - 1	Answer the Following	[05]
(i)	Back tangent	
(ii)	Point of intersection	
(iii)	Point of curve	
(iv)	Point of tangency	
(v)	Forward tangent	

Q - 2 (a)	Write short note on the following	[10]
	(i) Ordinate or offset from long chord	
	(ii) Two theodolite method	

OR

Q - 2 (a)	Explain briefly with suitable diagram Super elevation on highway.	[05]
	Write short note on the following	[05]
	ii) Equilibrium cant and cant deficiency	
	(iii) Centrifugal Ratio	

| Q - 3 (a) | What is tachometry? Explain the principle of stadia. | [05] |
| Q - 3 (b) | Write the Advantage and disadvantage of tachometry. | [05] |

OR

Q - 3 (a)	What are the instruments used in Tachometry. Explain in brief with suitable diagram.	[05]
Q - 3 (b)	Explain in brief Simpson's one third rule.	[05]
Q - 4	The following perpendicular offsets were taken at 10 m interval from a survey line to an irregular boundary line.	[05]

3.25, 5.60, 4.20, 6.65, 8.75, 6.20, 3.25, 4.20, 5.65

Calculate the area enclosed between the survey line, the irregular boundary line and the first and last offsets. By the Mid ordinate rule

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