



Question Paper Code:

CE301PC

ACE-R20

Semester End Examination
II B. Tech- I Semester- MARCH-2022
SURVEYING AND GEOMATICS
(Civil Engineering)

Time: 3 Hours

Max. Marks: 70

H. T. No

Answer any 5 Questions out of 8 Questions from the following

Q.No	Question	Marks																
1. a)	Define surveying. What are the principles of surveying? Explain them briefly.	7																
b)	Differentiate between plane surveying and geodetic surveying.	7																
2. a)	What is local attraction? How will you determine it in a closed traverse?	4																
b)	Below are the bearings observed in a traverse survey conducted with a prismatic compass at a place where local attractions were suspected? <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Line</th> <th>F.B</th> <th>B.B</th> </tr> </thead> <tbody> <tr> <td>PQ</td> <td>124°30'</td> <td>304°30'</td> </tr> <tr> <td>QR</td> <td>68°15'</td> <td>246°0'</td> </tr> <tr> <td>RS</td> <td>310°30'</td> <td>135°15'</td> </tr> <tr> <td>SP</td> <td>200°15'</td> <td>17°45'</td> </tr> </tbody> </table> At what stations do you suspect local attraction? Find the corrected bearings of the lines and also calculate the included angles.	Line	F.B	B.B	PQ	124°30'	304°30'	QR	68°15'	246°0'	RS	310°30'	135°15'	SP	200°15'	17°45'	10	
Line	F.B	B.B																
PQ	124°30'	304°30'																
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3. a)	Write short notes about types of levels and levelling staves.	4																
b)	The following staff readings were taken with a level. The instrument has been shifted after the 4th, 7th and 10th readings. The R.L of the starting point (B.M) is 100.00m. Enter the readings in the form of a level book page and reduce the level by the Rise and Fall (or) collimation method and apply the usual checks. 2.65, 3.74, 3.83, 5.27, 4.64, 0.38, 0.96, 1.64, 2.84, 3.48, 4.68 and 5.26.	10																
4. a)	How do you determine the capacity of a reservoir using contours?	4																
b)	The following offsets were taken in meters from a chain line to a hedge <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Distance</th> <th>0</th> <th>30</th> <th>60</th> <th>90</th> <th>120</th> <th>150</th> <th>180</th> </tr> </thead> <tbody> <tr> <td>Offset</td> <td>9.4</td> <td>10.5</td> <td>12.5</td> <td>13.8</td> <td>15.5</td> <td>16.8</td> <td>8.9</td> </tr> </tbody> </table> Compute the area included between the chain line, the hedge and end offset by the Simpson's rule	Distance	0	30	60	90	120	150	180	Offset	9.4	10.5	12.5	13.8	15.5	16.8	8.9	10
Distance	0	30	60	90	120	150	180											
Offset	9.4	10.5	12.5	13.8	15.5	16.8	8.9											
5. a)	Write short notes on temporary adjustments of theodolite	7																
b)	Derive an expression to determine reduced level of top of the tower when base is accessible	7																

6. a)	Write a short note on principle of compass surveying	4
b)	Discuss the characteristics of contours. Give suitable sketches.	10
7. a)	Write a short note on the errors in EDM.	7
b)	Give a brief description of GPS. What are its main basic advantages over traditional method of surveying?	7
8. a)	Derive an expression for the relief displacements in an aerial photograph?	7
b)	Differentiate between aerial photogrammetry and terrestrial photogrammetry	7