

Day and Date: .....day, .../.../2022

Seat No:
----------

Time: .....

**Max. Marks- 50**

**Instructions:**

- i. All Questions are compulsory.
- ii. Figure to the right indicate full marks.

BT	CO's	Q.No.		Marks																							
		<b>Q.1</b>	<b>All Questions are compulsory</b>	<b>20</b>																							
<b>3</b>	<b>CO1</b>	<b>a</b>	<p>Find the RL of station B from two observations taken by a theodolite from station A one to BM and other to station B.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Instrument station</th> <th>Staff station</th> <th>Target</th> <th>Vertical angle</th> <th>Staff readings</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td rowspan="2">A</td> <td rowspan="2">BM</td> <td>Lower</td> <td>-12°30'</td> <td>0.565</td> <td rowspan="4">RL of instrument axis = 655.5m</td> </tr> <tr> <td>Upper</td> <td>-8°20'</td> <td>2.565</td> </tr> <tr> <td rowspan="2">A</td> <td rowspan="2">C</td> <td>Lower</td> <td>-7°30'</td> <td>1.25</td> </tr> <tr> <td>Upper</td> <td>+3°12'</td> <td>3.20</td> </tr> </tbody> </table> <p>Find RL of staff station C and calculate the horizontal distance between the BM and staff station C.</p>	Instrument station	Staff station	Target	Vertical angle	Staff readings	Remarks	A	BM	Lower	-12°30'	0.565	RL of instrument axis = 655.5m	Upper	-8°20'	2.565	A	C	Lower	-7°30'	1.25	Upper	+3°12'	3.20	<b>7 M</b>
Instrument station	Staff station	Target	Vertical angle	Staff readings	Remarks																						
A	BM	Lower	-12°30'	0.565	RL of instrument axis = 655.5m																						
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<b>3</b>	<b>CO2</b>	<b>b</b>	What is meant by satellite station and reduction to the centre	<b>5M</b>																							
<b>3</b>	<b>CO3</b>	<b>c</b>	What is the necessity of providing overlaps in Aerial Photogrammetry? The scale of an aerial photograph is 1:10000 size of photograph is 200 mm x 200 mm. Determine the number of photographs required to cover an area of 8 Km x 12.5 Km. Take longitudinal overlap 60% and side lap as 30%	<b>8 M</b>																							
		<b>Q.2</b>	<b>All Questions are compulsory</b>	<b>10</b>																							
<b>2</b>	<b>CO4</b>	<b>a</b>	Explain in brief applications of GIS.	<b>4</b>																							
<b>2</b>	<b>CO4</b>	<b>b</b>	Write a note on advantages of GIS mapping.	<b>6</b>																							
		<b>Q.3</b>	<b>All Questions are compulsory</b>	<b>10</b>																							
<b>2</b>	<b>CO4</b>	<b>a</b>	What is an idealized Remote Sensing system?	<b>4</b>																							
<b>2</b>	<b>CO4</b>	<b>b</b>	Write in detail applications of Remote Sensing in Civil Engineering.	<b>6</b>																							
		<b>Q.4</b>	<b>Attempt any two out of three questions</b>	<b>10</b>																							
<b>2</b>	<b>CO4</b>	<b>a</b>	Explain Waypoints, Tracks and Routes in GNSS.	<b>5</b>																							
<b>2</b>	<b>CO4</b>	<b>b</b>	Describe the components of GNSS with neat sketch.	<b>5</b>																							
<b>2</b>	<b>CO4</b>	<b>c</b>	Write a short note on applications of GNSS in Civil Engineering field.	<b>5</b>																							