

**VIT**Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)
CHENNAI**Continuous Assessment Test (CAT) – I - AUGUST 2025**

Programme	:	B. Tech., Civil Engineering	Semester	:	Fall 2025-26
Course Code & Course Title	:	BCLE204L & Surveying	Class Number	:	CH2025260101860
Faculty	:	Dr. Mohan K	Slot	:	B1+TB1
Duration	:	90 Minutes	Max. Mark	:	50

General Instructions:

- ☐ Write only your registration number on the question paper in the box provided and do not write other information
- ☐ Only non-programmable calculator without storage is permitted

Answer all questions				
Q. No	Description	Marks	CO	BT Level
1	Considering the challenges of field conditions such as uneven terrain and obstructions, analyze how the choice of instruments for chaining, the concept of ranging, and the method of indirect ranging can be adapted to ensure accurate distance measurement. Support your answer with diagrams and practical examples.	10	1	L1
2	Critically evaluate the intersection method for locating points under challenging field conditions. Compare alternative solution approaches, explaining their procedures, accuracy, feasibility, and key advantages and disadvantages	10	1	L1
3	In the context of terrain analysis for engineering projects, describe the characteristics of contours and illustrate them with suitable diagrams. Interpret how different contour patterns indicate various landforms, and critically evaluate how this information can be applied to optimise design decisions in projects such as road alignment, reservoir planning, and slope stability assessment.	10	2	L2

4	(a) A closed traverse ABCD was conducted round a lake and the following bearings were obtained. Determine the stations effected from local attraction and obtain correct bearings. The bearings of the sides of a closed traverse ABCD are as shown below: <table border="1"> <thead> <tr> <th>Line</th> <th>FB</th> <th>B.B</th> </tr> </thead> <tbody> <tr> <td>AB</td> <td>124° 30'</td> <td>304° 30'</td> </tr> <tr> <td>BC</td> <td>68°15'</td> <td>246° 00'</td> </tr> <tr> <td>CD</td> <td>310°30'</td> <td>135°15'</td> </tr> <tr> <td>DA</td> <td>200°15'</td> <td>17°15'</td> </tr> </tbody> </table> (b) The reduced bearings of the lines of traverse are given below. Convert all to Whole circle bearings, Determine Included angles of the given traverse. Also give suitable sketches. <table border="1"> <thead> <tr> <th>Line</th> <th>FB</th> </tr> </thead> <tbody> <tr> <td>AB</td> <td>N60°25'E</td> </tr> <tr> <td>BC</td> <td>S85°30'E</td> </tr> <tr> <td>CD</td> <td>S25°45'W</td> </tr> <tr> <td>DE</td> <td>S64°30'W</td> </tr> <tr> <td>EF</td> <td>N82°45'W</td> </tr> <tr> <td>FA</td> <td>N28°14'W</td> </tr> </tbody> </table>	Line	FB	B.B	AB	124° 30'	304° 30'	BC	68°15'	246° 00'	CD	310°30'	135°15'	DA	200°15'	17°15'	Line	FB	AB	N60°25'E	BC	S85°30'E	CD	S25°45'W	DE	S64°30'W	EF	N82°45'W	FA	N28°14'W	5+5	2	L2
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5	The following consecutive readings were taken with a level 1.904, 2.653, 3.906, 4.026, 1.964, 1.702, 1.592, 1.261, 2.542, 2.006 and 3.145. The instrument was shifted after 4th and 7th readings. The 1st reading was taken on a staff held on B,M of R.L of 150m. Calculate the R.L of the points by using Height of Instrument.	10	2	L2																													
*****All the best *****																																	