

	<p style="text-align: center;"><b>ADAMAS UNIVERSITY</b>  <b>END (EVEN) SEMESTER EXAMINATION : MAY 2021</b>  (Academic Session: 2020 – 21)</p>		
<b>Name of the Program:</b>	B.Tech in Civil Engineering	<b>Semester:</b>	IV
<b>Paper Title :</b>	SURVEYING	<b>Paper Code:</b>	ECE42106
<b>Maximum Marks :</b>	40	<b>Time duration:</b>	3 Hrs.
<b>Total No of questions:</b>	8	<b>Total No of Pages:</b>	2
(Any other information for the student may be mentioned here)	<ol style="list-style-type: none"> <li>1. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name &amp; Code, Date of Exam.</li> <li>2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page.</li> <li>3. Assumptions made if any, should be stated clearly at the beginning of your answer.</li> </ol>		

### Group A

**Answer All the Questions (Attempt all Five) (5 x 1 = 5)**

**Q. 1.**

- (a) Explain the reason why 'Slope Correction' in chain surveying is always negative. (1)
- (b) State the difference between 'Geographical Meridian' and 'Magnetic Meridian'. (1)
- (c) What is the function of 'Plumbing Fork' in plane table surveying? (1)
- (d) What is the importance of Benchmark in the context of Levelling? (1)
- (e) Explain the term: 'Transiting of Telescope'. (1)

### Group B

**Answer any Three Questions (3 x 5 = 15)**

- Q. 2.** Illustrate five important characteristics of Contours with proper sketches. (5)
- Q. 3.** A traverse ABCDA is made in the form of a square taking in anticlockwise order. If the bearing of line AB is 50°, find the bearing of the other sides. (5)
- Q. 4.** If a simple curve having radius 100 m and deflection angle being 35° then calculate the followings: (i) Angle of Intersection, (ii) Tangent Length, (iii) Length of the Curve, (iv) Length of Long Chord and (v) Apex Distance. (5)
- Q. 5.** A chain line ABC crosses a river, B and C being on the near and opposite banks respectively. A perpendicular BP, 50 m long, is set out at B on the right of the chain line. AB is 30 m long. The bearings of C and A taken from P are 340°30' and 230° respectively. Find the chainage of C if chainage of B is 270.5 m. (5)

**Group C**  
**Answer any Two Questions (2 x 10 = 20)**

- Q. 6.** (i) What are the disadvantages of 'Plane Table Surveying'? (3)  
(ii) The following is the page of a level book from which several values are missing. Reconstruct the page and fill all the missing entries. Apply all the necessary checks. (7)

Station	B.S.	I.S.	F.S.	Rise	Fall	R.L.	Remarks
1	1.385					100.000	B.M.
2		1.430			x	x	
3		x			0.395	x	
4	x		1.275	x		x	CP. 1
5	0.630		0.585	0.310		x	CP. 2
6		0.920			x	100.130	
7		x			0.210	x	
8			1.740		x	x	

- Q. 7.** (i) Explain the method of preparing a contour map with proper sketch when the area is small and can be controlled from a single station. (6)  
(ii) Establish the relation between Radius and Degree of Curve. (4)
- Q. 8.** (i) Determine the level difference between 2 points (h) when due to presence of Small River it is not possible to place level instrument in between those points. Consider 'e' as a combined error due to curvature of the earth surface, refraction and collimation. (7)  
(ii) Define the following terms: (a) Levelling of a Surveying Instrument, (b) Centering of a Surveying Instrument. (3)