

<b>5E5064</b>	Roll No. : _	Total Printed Pages : <b>3</b>
	<b>5E5064</b>	
<b>B. Tech. (Sem. V) (Mercy Back) Examination, November 2018</b> <b>Civil Engineering</b> <b>5CE4A Surveying - II</b>		

Time : 3 Hours

Maximum Marks : 80  
Min. Passing Marks : 24

*Attempt any five questions, selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination.  
(Mentioned in form No. 205)*

1. NIL 2. NIL

**UNIT - I**

- 1 (a) Explain how will you determine the elevation difference between two stations by single observation. Derive expression for elevation difference for angle of elevation. 8
- (b) Make a neat sketch and explain what do you understand by axis signal correction. 8

**OR**

- 1 Explain how will you determine the reduced level of top of a electric tower, when two instruments are in same vertical plane position. Also derive the expression for the same. 16

5E5064 |

1

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**UNIT - II**

- 2 (a) Enumerates the methods of setting out simple circular curve. Explain the method of perpendicular offset from long chord to set out the simple circular curve.

8

- (b) Explain method of computing length of transition curve.

8

**OR**

- 2 (a) What do you understand by super elevation ? Explain how will you compute super elevation for roads.

8

- (b) Explain empirical method of computing length of transition curve.

8

**UNIT - III**

- 3 (a) Explain what do you understand by strength of figure. Explain how will you calculate strength of figure.

8

- (b) Describe various criteria for selection of triangulation stations.

8

**OR**

- 3 (a) What do you understand by well condition triangle ? What is the importance a well condition triangle in triangulation.

8

- (b) What is the necessity of a satellite station in the triangulation survey work ? How the centre to reduction is done if satellite station is selected in triangulation network ?

8

**UNIT - IV**

- 4 (a) What do you understand by weight of a quantity ? Explain the laws of weights with suitable example. 8
- (b) Explain with example the following :  
(i) Most probable error  
(ii) Indirect observation. 4×2=8

**OR**

- 4 (a) Explain with suitable examples the difference between mistakes and systematic errors. 8
- (b) Explain what do you understand by station or figure adjustment. 8

**UNIT - V**

- 5 (a) Explain astronomical corrections. 8
- (b) Explain following with the help of neat sketch :  
(i) Plane of equiptic.  
(ii) Variation of declination of sun with salient dates and features. 4×2=8

**OR**

- 5 Calculate the sun's azimuth and hour angle at a place in latitude  $42^{\circ} 30' N$ , when its declination is  
(i)  $22^{\circ} 12' N$   
(ii)  $22^{\circ} 12' S$

16