Reg. No. : | | | | | | | | | | |

Question Paper Code: 34106

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Civil Engineering

01UCE406 – SURVEYING - II

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Define reverse curve.
2. List out the different kinds of transition curves.
3. State the principle of signals used in triangulation.
4. Name the different corrections to be applied to length of a base line.
5. What are different classifications of error?
6. What is meant by most probable values?
7. Define scale.
8. What is a fathometer?
9. Define sounding.
10. What is azimuth?

PART - B (5 x 16 = 80 Marks)

11. (a) Explain with neat sketches the different types of horizontal curve. (16)

Or

(b) (i) What are transition curves? How will you determine the length of transition curves? (8)

(ii) Explain the procedure for calculating the length of valley curve. (8)

12. (a) (i) Explain in detail about the different triangulation systems with neat sketches. (10)

(ii) Explain briefly the different aspects of fieldwork in triangulation. (6)

Or

(b) Two triangulation stations *A* and *B* are 50*km* apart. The elevation of *A* is 205.5*m* and that of *B* is 232.2*m*. The intervening ground may be assumed to have a uniform elevation of 175*m*. Determine the height of the signal at *B* if the line of sight is required to pass at least 3*m* above ground. (16)

13. (a) Derive an expression for principle of least squares. (16)

Or

(b) Find the most probable values of A, B and C from the following (16)

A	=	*25° 17' 10.2"*	*Weight 1*
B	=	*28° 22' 16.4"*	*Weight 2*
C	=	*32°40' 28.5"*	*Weight 3*
A+ B	=	*53°39' 23.1"*	*Weight 2*
A+ B + C	=	*86°3919' 57.8"*	*Weight 1*

14. (a) Explain the types of EDM instruments. (16)

Or

(b) Form the normal equation for X_1, Y_1 & Z in the following equations with respective weights

$3x + 3y + z - 4 = 0$	wt – 2
$x + 2y + 2z - 6 = 0$	wt – 3
$5x + y + 4z - 21 = 0$	wt – 1

(16)

15. (a) Determine the how angle and declination of star from following data.

Altitude of star	$= 22^{o}\ 30'$
Azimuth of the star	$= 145^{o}$ E
Latitude of the observer	$= 49^{o}$ N.

(16)

Or

(b) Explain in detail any one method of finding the sounding. (16)