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

Question Paper Code: 31416

B.E. / B.Tech. DEGREE EXAMINATION, NOVEMBER 2015

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. Explain the term degree of curve.
3. What are the different types of signals used in triangulation?
4. State the principle of signals used in triangulation.
5. State the law of weights.
6. Define the terms probable value and probable error.
7. Write the sources of error.
8. What is an EDM?
9. Define sounding.
10. What is azimuth?

PART - B (5 x 16 = 80 Marks)

11. (a) Explain the different elements of a simple curve with neat sketch and brief on its notations. (16)

Or

(b) Explain the setting out of transition curve by offset and angles method. (16)

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) Explain the general principles of least squares. (16)

Or

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

A	=	$25^o\,17'\,10.2''$	*Weight 1*
B	=	$28^o\,22'\,16.4''$	*Weight 2*
C	=	$32^o 40'\,28.5''$	*Weight 3*
$A+B$	=	$53^o 39'\,23.1''$	*Weight 2*
$A+B+C$	=	$86^o 3919'\,57.8''$	*Weight 1*

14. (a) (i) Summarize the care and maintenance of total station instruments. (10)

(ii) Discuss about the modern positioning system. (6)

Or

(b) (i) Discuss the clasificación of electro optical system. (8)

(ii) Explain the working principle and measuring principle of microwave instruments. (8)

15. (a) Determine the azimuth and altitude of a star from the following data (16)

1.) declination of the star = $20^o 30'$

2.) hour angle of star = $42^o\,6'$

3.) latitude of observation = $50^o\,N$

Or

(b) (i) List the methods used for the finding the sounding. (6)

(ii) Explain in detail any one method of finding the sounding. (10)