TCE-403   225   Printed Pages : 2

Paper ID & Roll No. to be filled in your Answer Book

Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐

B. TECH. (SEM.IV)
UTU EXAMINATION, 2013-14
ADVANCED SURVEYING

Time: 3.00 Hours]   [Total Marks: 100

Note: (i)   Attempt ALL questions.

      (ii)   All Questions carry EQUAL marks.

      (iii)   Be Precise in your answer.

1.   Attempt any four out of the following.   (4x5=20)

    a)   What are the function of signals and towers? Describe their type.

    b)   Explain the terms hour angle and right ascension.

    c)   What is photogrammetry? Discuss its limitation.

    d)   What is GIS ? Explain its different component.

    e)   What is the triangulation? What is the principle of triangulation?

2.   Attempt any four out of the following.   (4x5=20)

    a)   What are the different kind of errors which occur in survey measurements?

    b)   What is vertical curve ? give the classification of vertical curve

    c)   What do you mean by superelevation or cant? Derive the expression .

    d)   What are hydrographic surveys?

    e)   What are the basic elements of visual interpretation of satellite images. Explain in brief.

3. Attempt any two out of the following. (2x10=20)

A. Find the correct angle a, b and c from the following observation using least square method and difference method.

<a= 35°14'15.3"
<b= 25° 15'26.4"
<c= 45° 18' 18.4"
<a+<b= 60° 29' 45.2"
<b+<c= 70° 33' 48.3"

B. What are the different laws of weights? Explain in detail assuming some angle value and weight.

C. What is reconnaissance? discuss in brief preliminary survey required for route

4. Attempt any two out of the following. (2x10=20)

A. The angles of a triangle X,Y,Z were recorded as follows.

	ANGLE	WEIGHT
X	86° 35' 11.1"	2
Y	42° 15' 17"	1
Z	51° 09' 34'	3

Find the best estimate of angles X, Y and Z by method of correlates.

B. What are transition curves? Explain the various methods for determining the length of transition curve.

C. Discuss least square principal of adjustment of observation.

D. Attempt any two out of the following. (2x10=20)

A. Discuss the effects of phase in sighting a sun signal and drive formulae for the correction to be applied to cylindrical signal when the bright portion is bisected.

B. Draw a neat sketch of circular curve and show its various elements thereon. Workout the relationship between the elements of a circular curve.

C. What are the different coordinate systems used in field astronomy? Describe any one of them.

x—x—x