

**TCE-403**

**250**

Printed Pages : 4

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

Roll No. 

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**B.Tech. IV Sem.**

End Semester Examination 2015

**Advance surveying**

*Time: 3.00 Hours]*

*[Total Marks: 100*

**Note:** Attempt all questions. Each question carry equal marks.

**Qus1 Attempt any Four of the following.**

- (a) Explain the principle of least squares
- (b) What are the elements of simple circular curve
- (c) What do you mean by triangulation figure?
- (d) What is photogrammetry?
- (e) Explain reconnaissance survey for highway.

**Qus2 Attempt any Four of the following.**

- (a) What is global positioning system ? Explain in detail
- (b) What is relationship between degree of curve and radius of curve?
- (c) Explain the principles of hydro graphic surveys

(d) What do you mean by most probable value?

(e) How base line is measured?

**Qus3 Attempt any two of the following.**

(a) Find the correct angle A, B and C from the following observation using least square method and difference method

$$\angle A = 35^{\circ} 14' 15.3''$$

$$\angle B = 25^{\circ} 15' 26.4''$$

$$\angle C = 45^{\circ} 18' 18.4''$$

$$\angle A+B = 45^{\circ} 18' 18.4''$$

$$\angle B+C = 70^{\circ} 33' 48.3''$$

(b) What are reverse curve? Describe their importance. Describe the process for setting out the same.

(c) Two straights AB & BC intersect at B at a chainage 750.00m the deflection angle is  $60^{\circ}$ . Calculate the following for a curve of radius 200m

(i) Tangent length

(ii) Length of curve

(iii) Chainage of first point

(iv) Chainage of last point

(v) Length of long chord

**Ques4 Attempt any Two of the following.**

- (a) Determine the Azimuth and altitude of a star from the following data.

Declination of star =  $20^{\circ} 30' N$

Hour angle of star =  $42^{\circ} 6'$

Latitude of observer =  $50^{\circ} N$

- (b) Determine the corrected value of the angle A from the following equation:

$2A = 46^{\circ} 22' 12''$  Weight-1

$3A = 69^{\circ} 33' 20''$  Weight-2

$4A = 92^{\circ} 44' 21''$  Weight-3

- (c) What do you mean by super elevation .Explain with neat sketch

**Qus 5 Attempt any Two of the following.**

- (a) A transition curve is required for a circular of 200m radius. the gauge being 1.5m and maximum super elevation restricted to 15cm.the transition curve is to be design for a velocity such that no lateral pressure imposed on rails and the rate of gain of radial acceleration is  $30\text{cm}/\text{sec}^3$ . calculate the required length of translation curve and design speed.

- (b) What are the basic elements of visual interpretation of satellite images .Explain in brief?

- (c) write short Note on .

- (i) Stereoscopic vision
- (ii) Stereoscopes
- (iii) GIS
- (iv) Remote sensing