

Roll No.

24198

B. Tech 4th Semester (Civil Engineering)

Examination – May, 2012

SURVEYING - II

Paper : CE-208-F

Time : Three hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complain in this regard, will be entertained after examination.

Note : Answer any *five* questions. Question no. 1 is **compulsory** and carries equal marks. Attempt *one* question from each Section. All question carry equal marks. Answers should be brief with neat sketches wherever required.

1. (a) What is the ratio of the effect of refraction in trigonometrical levelling to that of curvature ?
- (b) Name the factors upon which the height of instrument and signal above the ground depends upon in geodetic survey.
- (c) What is meant by eccentricity of signal ?
- (d) Name the method known as "rigid method" of figure adjustment.
- (e) Name the most important factor in selecting a survey station.

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- (f) Rotation of an aerial camera about the line of flight is known as (a) tilt or (b) tip or (c) drift
- (g) Parallax is used to measure (a) ht or parallax difference
- (h) The number of planets of sun are (a) 8 or (b) 9 or (c) 12
- (i) What is the abbreviation of International Atomic Time ?
- (j) What is the graphical element of vector data structure? $10 \times 2 = 20$

SECTION – A

2. (a) How many methods are there to determine the difference of elevation of two stations ? Describe.
- (b) Correct the observed altitude for the height of signal and refraction from following data

Observed altitude = $+3^{\circ}12'48''$

Height of instrument = 1.585 m

Height of signal = 4.343 m

Horizontal distance = 3787.14m

$$8 + 12 = 20$$

3. (a) Explain what are co-relates ?
- (b) From an eccentric Station E, 13.8m from Station A, the angles measured to three trigonometrical Stations A, B and C are as follows, the stations C and E being on opposite side of line AB :

LBEC = $68^{\circ}26'36''$

LCEA = $32^{\circ}45'48''$

The length of AC & AB are 5588.4 m and is 4371.0 m, respectively. Calculate the angle BAC

$$8 + 12 = 20$$

SECTION – B

4. (a) What do you understand by most probable value ? Where is it used ?
(b) Find the most probable values of the angles A, B and C of triangle ABC from the following observation equations : $6 + 14 = 20$
 $A = 58^\circ 24' 36''$, $B = 52^\circ 12' 43''$; $C = 69^\circ 22' 45''$
5. (a) Define (i) the zenith (ii) the Nadir (iii) altitude and (iv) latitude
(b) Find the standard time corresponding to local mean time 7 hr 23 m 32 s at a place in longitude $68^\circ 36' E$. Standard Meridian in India is $82^\circ 30' E$.
 $12 + 8 = 20$

SECTION – C

6. (a) Explain in detail about stereoscopic vision and stereoscopies
(b) The scale of the photograph is 1 cm = 100m and size of photograph is 23cm \times 23cm. Determine the number of photographs required to cover an area of 150 sq km if the longitudinal overlap is 60% and the side overlap is 30%. $8 + 12 = 20$
7. (a) Briefly describe the advantages of aerial photography over mapping. What are its limitations ?
(b) The average photographic base of a pair of overlapping photographs is 92.54 mm and the flying height is 5000m above the ground. Work out the parallax difference for a contour interval of 10m. $8 + 12 = 20$

SECTION – D

8. (a) Define remote sensing ? How does it differ from photogrammetry ?
- (b) List applications of remote sensing describe any two applications $10 + 10 = 20$
9. (a) Describe the raster and vector data structure.
- (b) What do you understand by global positioning system ? $10 + 10 = 20$
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