Section–D

8. (a) What do you understand by remote sensing ? Differentiate between active and passive remote sensing. 10

   (b) Write a detailed note on application of remote sensing. 10

9. (a) What do you understand by GPS and GIS and their objectives ? 10

   (b) Write a short note on linkage of GIS to remote sensing. 10

B.Tech. 4th Semester (Civil)

Examination, May–2016

SURVEYING–II

Paper–CE-208-F

Time allowed : 3 hours] *[Maximum marks : 100*

Note : ***Question No. 1 is compulsory.*** *Students have to attempt* ***five*** *questions in total at least* ***one*** *question from each section. All questions carry equal marks.*

1. (i) Define EDM. 10×2=20
   (ii) Write the equation of time.
   (iii) Explain the Sidereal time
   (iv) Define tilt displacement.
   (v) Define most probabale value.
   (vi) Describe the Azimuth.
   (vii) Define conditioned quantity.
   (viii) What do you understand by parallax ?
   (ix) Explain the need for overlap in aerial photography.
   (x) Why is an anallatic lens provided in a tacheometer ?

Section–A

2. The top (Q) of a chimney was sighted from the two station P and R at very different level, the stations P and R being in line with top of the chimney. The angle of elevation from P to the top of chimney was 36°15' and that from R to the top of the chimney was 16°48'. The angle of elevation from R to a vane 1 m above the foot of the staff held at P was 8°24'. The height of

instrument at P and R were 1.85 m and 1.65m respectively. The horizontal distance between P and R was 120 m and R.L. of R was 258.260 m. Find the R.L. of the top of the chimney and horizontal distance from P to the chimney. 20

3. (a) The elevation of two triangulation stations A and B, 150 km apart, are 250 m and 1050 m above MSL. The elevation of two peaks C and D on the profile between satellite stations are 300 m and 550 m respectively. The distance AC = 50 km and AD = 85 km. Design a suitable signal required at B, so that it is visible from the ground station A. 12

(b) How do you determine the intervisibility of triangulation station ? 8

Section–B

4. (a) The following are the observed values of an angle. 12

Angle	weight
18° 09' 18"	2
18° 09' 19"	3
18° 09' 20"	2

Determine probable error of observation of weight 3 and that of weighted arithmetic mean and probable error of single observation of unit weight. 8

(b) What do you understand by the terms station adjustment and figure adjustment. 8

5. (a) Determine the hour angle and declination of star from the following data : 12

Altitude of the star 22° 30'

Altitude of the star 145° E

Latitude of the observer 49° N

(b) What is equation of time ? Show that it vanishes four times a year. 8

Section–C

6. (a) Derive the parallax equation for determining the heights from a pair of vertical photographs. 10

(b) Vertical photographs were taken from height of 3045 m, the focal length of the camera lens being 15.26 cm. if the prints were 22.86 × 22.86 cm and the overlap 60%, what was the length of the air base ? What would be the scale of the print ? 10

7. (a) Describe the various steps involved in the combination of vertical air photographs by the principal point radial line method. 10

(b) What is tilt distortion ? Prove that, in a tilted photograph, tilt distortion is radial from the isocentre. 10