Total No. of Questions : 6]

SEAT No. :

P1

[Total No. of Pages : 2

APR-18/T.E./Insem - 1
T.E. (Civil) (Semester - II)
ADVANCE SURVEYING
(2012 Pattern)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates :

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right indicate full marks.***
3) ***Use of logarithmic tables slide rule, mollier charts, electronic pocket calculator and steam tables is allowed.***
4) ***Assume suitable data, if necessary.***

Q1) a) Explain with neat sketches, commonly used layouts of triangulation systems. **[5]**

b) State any four advantages of space based positioning systems. **[5]**

OR

Q2) a) What factors are to be considered while selecting a best triangulation figure or system? **[4]**

b) Two triangulation stations A and B are 42 km apart and have elevation of 279 and 276 m respectively. Find the minimum height of signal required at B so that the line of sight may not pass nearer the ground than 3 m. The intervening ground may be assumed to have a uniform elevation of 252 m. **[6]**

Q3) a) Explain the term sounding and explain any two methods of locating the sounding positions. **[4]**

b) The observations were made on three stations A, B, C from boat at O with help of sextant. Stations B & O being on the same side of AC. Calculate the distances of the boat from three stations. Angle AOB = 30°25', Angle BOC = 45°25',Angle ABC =130°10', AB = 4000 m, BC = 4995 m. **[6]**

OR

P.T.O.

Q4) a) What do you understand by three point problem? Explain with neat sketch. **[5]**

b) What do you mean by echo- soundings, explain with sketch. **[5]**

Q5) a) The triangulation stations A & B are 2800 m part. Observations were for vertical angle of elevation from A to B and the mean angle observed was 1° 28'32". The height of the instruments was 1.38 m and signal was 2.46 m high. If the reduced level of station A was 125 m and the coefficient of refraction was 0.07, calculate the reduced level of B. The radius of the earth 6372 km. **[6]**

b) While doing an underground survey describe the transferring the surface alignment through a Shaft? **[4]**

OR

Q6) a) Derive the expression for the difference of level between two points A and B a distance D apart, with the vertical angle as the angle of elevation from A to B. **[6]**

b) Explain with neat sketch, how determine the location of piers of bridge. **[4]**