**AKGEC/IAP/FM/02**

**AJAY KUMAR GARG ENGINEERING COLLEGE, GHAZIABAD**

**DEPARTMENT OF CIVIL ENGINEERING**

**SESSIONAL TEST -II**

Course: B.Tech Semester: IIIrd

Session: 2017-18 Section: CE-1& CE-2 Subject: Surveying-I Sub. Code: RCE-302

Max Marks: 50 Time: 2 hour

**ANSWER ALL QUESTIONS**

**SECTION A**

**(5 x 2 =10)**

**1. Attempts all the parts**

1. Define: (i) Azimuth (ii) Level line (iii) Stadia intercept (iv) True meridian.
2. Define Local Attraction. How would you detect the presence of local attraction in an area?
3. Distinguish between Surveyors and Prismatic compass.
4. What are the various uses of a contour map?
5. Define magnetic dip. At which point on Earth, the magnetic dip is zero.

**SECTION B**

**(5 x 5 =25)**

**2. Attempts all the parts**

1. Define Contour Interval. Write the characteristics of contours.
2. Derive the formula for distance elevation by tangential method when (i) Both angles are angles of elevation (ii) One angle of elevation and another is depression.
3. Explain refraction and curvature correction. A luminous point object on the top of a hill was just observed by an observer standing at a height of 25 m above the mean sea level, from his position on the ship. If the ship is 65 km from the hill find the height of the hill.
4. Discuss in detail the procedure used for the measurement of horizontal angle by repetition method.
5. Discuss in detail, the methods of direct and indirect contouring.

**SECTION C**

**(7.5 x 2 =15)**

**3. Attempts all the parts**

1. The following successive staff readings were taken with a level using a 5 m levelling staff on a continuously sloping ground at intervals of 20 m:

**0.385, 1.030, 1.925, 2.825, 3.730, 4.685, 0.625, 2.005, 3.110 and 4.485**

The reduced level of the first point is known to be 208.125 m. Enter the staff readings in a table and work out the reduced level of all the points by any of the methods with suitable check. Also find the gradient of the line joining the first and last points.

1. The following are the bearings observed from a prismatic compass at a place where local attraction was suspected.

|  |  |  |
| --- | --- | --- |
| **LINE** | **FORE BEARING** | **BACK BEARING** |
| AB | 1240 30’ | 3040 30’ |
| BC | 680 15’ | 2460 |
| CD | 3100 30’ | 1350 15’ |
| DA | 2000 15’ | 170 45’ |

At what stations do you suspect local attraction? Find the correct bearings of the lines by using included angles.