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Roll No. .... 170733/120733/030733

**3rd Sem. / Civil, Brick Tech.,  
Const. Mgmt., Highway Engg.  
Subject : Surveying - I**

Time : 3 Hrs.

M.M. : 100

**SECTION-A**

**Note:** Objective type questions. All questions are compulsory (10x1=10)

**Fill in the Blanks**

- Q.1 Trial and error is the best method of solving \_\_\_\_\_ problem. (CO-5)
- Q.2 The least count of telescopic levelling staff is \_\_\_\_\_. (CO-4)
- Q.3 Sag in chain is \_\_\_\_\_ source of error. (CO-2)
- Q.4 Zero is marked at \_\_\_\_\_ in case of prismatic compass. (CO-3)
- Q.5 The staff reading taken at a point of known elevation is termed as \_\_\_\_\_. (CO-4)
- Q.6 Inter section method is used for locating the position of \_\_\_\_\_ objects. (CO-5)
- Q.7 The sum of the interior angles of a closed transverse is \_\_\_\_\_. (CO-3)

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- Q.8 The operation of levelling across any river is termed as \_\_\_\_\_. (CO-4)
- Q.9 The principal of chain surveying is to divide the area into network of \_\_\_\_\_. (CO-2)
- Q.10 Lehman's rules are applied to reduce the size of the \_\_\_\_\_. (CO-5)

**SECTION-B**

**Note:** Very short answer type questions. Attempt any ten questions out of twelve questions. 10x2=20

- Q.11 Explain Back Sight. (CO-4)
- Q.12 Write down function of trough compass. (CO-5)
- Q.13 Describe Arbitrary Meridian. (CO-3)
- Q.14 Explain briefly Plain Alidade (CO-5)
- Q.15 Describe Focussing of eye piece and object glass. (CO-4)
- Q.16 Differentiate between whole circle bearing and quadrantal bearing. (CO-3)
- Q.17 Name methods of plane table surveying. (CO-5)
- Q.18 Explain importance of check line in chain surveying. (CO-2)
- Q.19 Define Height of Instrument in Levelling. (CO-4)
- Q.20 Write briefly types of measurements. (CO-1)
- Q.21 Explain the purpose for which resection method is used in plane tabling. (CO-5)

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Q.22 Differentiate between vertical surface and vertical line. (CO-4)

### SECTION-C

**Note:** Short answer type questions. Attempt any eight questions out of ten questions. 8x5=40

Q.23 What do you mean by local attraction? How will you detect a local attraction? (CO-3)

Q.24 What are the precautions to be taken by level man and staff man? (Co-4)

Q.25 Explain methods of orientation of plane table. (CO-5)

Q.26 Describe how chain is tested and adjusted in the field. (CO-2)

Q.27 Explain errors due to manipulation and sighting in plane table surveying. (CO-5)

Q.28 Enumerate types of Bench Marks. Explain any two of them. (CO-4)

Q.29 True bearing and magnetic bearing of line AB are  $247^\circ$  and  $249^\circ$ . Find the Declination. (CO-3)

Q.30 Define plane surveying and Geodetic surveying. (CO-1)

Q.31 Explain Testing and Adjustment of Plane Table. (Co-5)

Q.32 Name the methods of calculation of reduced levels. Describe them in detail. (CO-4)

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### SECTION-D

**Note:** Long answer type questions. Attempt any three questions out of four questions. 3x10=30

Q.33 Explain the sources of errors in levelling. (CO-4)

Q.34 State the advantages and disadvantages of Plane Tabling. (CO-5)

Q.35 The following are the observed fore bearings and back bearings of a closed traverse. At what stations do you suspect local attraction. Find the correct bearings of the lines. (CO-3)

Line	F.B	B.B.
AB	$44^\circ-30'$	$226^\circ-30'$
BC	$124^\circ-30'$	$303^\circ-15'$
CD	$181^\circ-0'$	$1^\circ-0'$
DA	$289^\circ-30'$	$108^\circ-45'$

Q.36 The following consecutive readings were taken with a level. The level was shifted after 4th, 7th and 10th readings. The first reading was taken on a B.M. of R.L. 150.00m. Draw out a page of level book, enter the readings and calculate the R.L. of all the points by collimation method. (CO-4)

1.520, 0.965, 1.475, 1.545, 0.435, 2.545, 1.715, 1.630, 1.915, 0.860, 1.790, 1.365 and 1.135

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