

Roll No. \_\_\_\_\_  
Total no. of Questions-7

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**B.Arch. (Semester 3<sup>rd</sup>)**  
**SURVEYING AND LEVELLING-I**  
**Subject Code: BARC1-322**  
**Paper ID: 120119**

**Time Allowed: 3 Hours**

**Max. Marks: 60**

**Instructions to Candidates:**

- 1) Attempt total Five questions. Question no. 1 is compulsory. Attempt Four questions from rest, selecting at least one from each unit.
- 2) Missing data, if any may be assumed suitably.

- Q1. (i) What do you understand by 'GTS Bench Marks'?
- (ii) Differentiate between Cumulative and compensating errors in chaining.
- (iii) Draw sketches for contours depicting a valley and hanging cliff.
- (iv) Define the term Reduced-Level and Datum.
- (v) Differentiate between True and Magnetic bearing.
- (vi) Does local attraction affect bearing of lines and angle between two lines? (2x6=12)

**Unit-I**

- Q2. (a) Explain step by step method of Reciprocal ranging used when a small hillock coming across the chain line. (6)
- (b) How will you measure a line between two points which are visible to each other but chaining is obstructed due to a river passing obliquely/normally through the line? (6)
- Q3. (a) Why zero is marked at South in the Prismatic Compass? Also explain how fore bearings are converted into back bearings in Quadrantal bearings system. (6)
- (b) Followings bearings were observed in a running close traverse with a compass. Calculate Back bearings of lines and the interior angles. Apply check. (6)

AB	40°-00'	BC	70°-00'
CD	210°-00'	DE	280°-00'

**Unit-II**

- Q4. (a) Discuss the advantages and disadvantages of Plane table surveying? (6)
- (b) Discuss method of Re-sectioning used in PT Survey. Explain in detail. (6)
- Q5. (a) Draw a neat labelled sketch of transit theodolite. (6)
- (b) Explain the method of repetition for measurement of Horizontal angle with a theodolite. (6)

**Unit-III**

- Q6. (a) What do you understand by term Bench Mark? Discuss different types of Bench marks in brief. (4)
- (b) Explain Rise and Fall method of levelling in detail. (4)
- (c) Write short notes on Box sextant and Planimeter. (4)
- Q7. (a) Explain various methods used for interpolation of contours. (6)
- (b) Describe the characteristics of contours. Also discuss uses of contour maps. (6)