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## PRESIDENCY UNIVERSITY BENGALURU

### SCHOOL OF ENGINEERING MID TERM EXAMINATION - MAY 2023

**Semester :** Semester II - B.Tech CIV - 2022

**Course Code :** CIV1005

**Course Name :** Sem II - CIV1005 - Surveying

**Program :** B.Tech. Civil Engineering

**Date :** 23-MAY-2023

**Time :** 10.30 AM - 12.00 PM

**Max Marks :** 50

**Weightage :** 25%

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#### Instructions:

- (i) Read all questions carefully and answer accordingly.
  - (ii) Question paper consists of 3 parts.
  - (iii) Scientific and non-programmable calculator are permitted.
  - (iv) Do not write any information on the question paper other than Roll Number.
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#### PART A

**ANSWER ALL THE QUESTIONS**

**(5 X 2 = 10M)**

1. To get a well-proportioned or well-shaped triangle, no angle should be less than \_\_\_\_\_  
a) 35° (CO1) [Knowledge]  
b) 45°  
c) 30°  
d) 15°
2. Layout of the field book consists of  
a) Chainage (CO1) [Knowledge]  
b) Offsets  
c) Linear measurements  
d) All of the above
3. Horizontal angle with the true Meridian through one of the extremities of the line is known as  
a) True Bearing (CO1) [Knowledge]  
b) Magnetic bearing  
c) Arbitrary bearing  
d) Magnetic declination

4. The levelling operation in which back-sight and fore-sight readings are taken and NO intermediate sights are observed is known as  
 a) Block Levelling (CO2) [Knowledge]  
 b) Fly Levelling  
 c) Check Levelling  
 d) Profile Levelling
5. The Layout of a field book consists of  
 a) Chainage (CO1) [Knowledge]  
 b) Offsets  
 c) Linear measurements  
 d) All of the above

### PART B

#### ANSWER ALL THE QUESTIONS

(4 X 5 = 20M)

6. Surveying is the art of determining the relative positions of different objects on the surface of the earth by measuring the horizontal distance between them. In this context, explain the basic principles of surveying with neat sketch.  
 (CO1) [Comprehension]
7. Levelling deals with measuring the relative position of objects. With respect to levelling, Define Backsight, Foresight, Reduced level and height of instrument.  
 (CO2) [Comprehension]
8. The bearing of a line is the horizontal angle which it makes with a meridian . Differentiate Fore bearing and Back bearing with a neat sketch.  
 (CO1) [Comprehension]
9. Ranging is an important step in chain surveying. Define ranging and explain indirect ranging.  
 (CO1) [Comprehension]

### PART C

#### ANSWER ALL THE QUESTIONS

(2 X 10 = 20M)

10. In cross-section levelling, you determine the elevations of points on a succession of lines running at right angles to the lengthwise line of the alignment. Following consecutive readings were taken with a levelling instrument at intervals of 15m - 0.780, 1.535, 1.955, 2.430, 2.985, 3.480, 1.155, 1.960, 2.365, 3.640, 0.935, 1.045, 1.630 and 2.545. The instrument was shifted after the sixth and tenth readings. Draw up a page of level book and determine the R.L of various points by rise and fall method. Take the RL of the point on which the first reading was taken as 180.750 m.  
 (CO2) [Application]
11. A river is flowing from west to east. For determining the width of the river two points A and B are selected exactly on southern bank such that AB = 75m, point A being westwards. The bearing of tree C on the northern bank are observed to be  $38^\circ$  and  $338^\circ$  respectively from A and B. Determine the width of the river.  
 (Hint: drop a perpendicular CD to line AB)  
 (CO1) [Application]