MIT World Peace University

Basic Civil Engineering
First Year B. Tech, Trimester 3
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Measurement of Bearings using Prismatic Compass

Experiment No. 5

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EXPERIMENT -5

Aim:

→ To find included angle of triangle using prismatic compass.

Instruments:

→ Prismatic compass
→ Ranging Rod
→ chain
→ Tape
→ Peg tripod stand
→ Small stones

Theory:

→ Prismatic compass is used for rough survey for measuring bearing and survey lines.

→ Least count is 30 min.
→ It is graduated in clockwise direction from 0° to 360°. Figures are written in inverted.
→ Zero is written in south end and ±180° is written in North end.
270° is in east.

Whole Circle Bearing

The bearing line is always measured clockwise

from north point of reference medium towards the line right round the circle.

→ Angle thus measured is called whole circle bearing.

→ The angle will be between 0 and 360°.

(*) Observations and Calculations.

1. Conversion of WCB in RB

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Case	WCB Between	RB	Quadrant
1	0 – 90	WCB	NE
2	90 – 180	180 – WCB	SE
3	180 – 270	WCB – 180	SW
4	180 – 270	360 – WCB	N.W

2. Conversion of WCB from R.B

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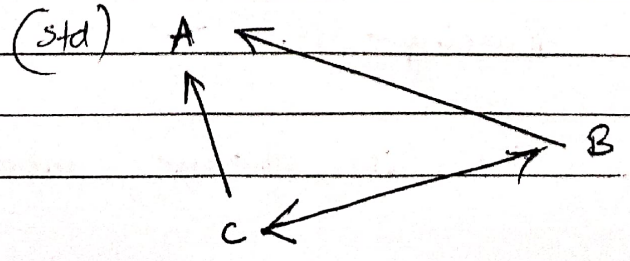
Case	RB quadrant	Rule of WCB	WCB
1	N.E	RB	0 – 90
2	S.E	RB (–) + 180	90 – 180 (–)
3	S.W	RB + 180	180 – (–270)
4	N.W	360 – RB	270 – 360

(*) Traverse : Direction of ABC on ground.



Observation Table

Station	Line	Observed Bearing		Diff	observed Included Angle	Correction	Corrected Included Angle	Corrected Bearing	
A	AB		6°		106°				
B	BC		130°		310°				
C	CA		246°		67°				