Scheme and Solution – 18CV35

Basic Surveying – 18CV35

IAT #1 – 20/12/2021

Qn # 1. (i) True bearing: Horizontal angle made by a line with the True Meridean. (2m)

(ii) Magnetic bearing: Horizontal angle made by a line with the magnetic meridean. (2m)

(iii) True meridean: Line passing thro' the point in the given plane intersecting North-pole & South pole with the Surface of the earth. (2m)

(iv) Magnetic meridean: Direction shown by a freely suspended magnetic needle which is always balanced and free from magnetic forces. (2m)

(v) Isogonic lines. Imaginary line joining points of equal declination. (2m)

Qn # 2. figure (4m) Explanation (6m)

Qn # 3. (i) Working from Whole to part
(ii) fixing Control of new points
(iii) Reconnaissance Survey
(iv) field Work & measurement
(v) Office Work. (1×5) = (5m)

Explain each of them ⟶ (1×5) = 5m

Qn #4. (i) for the first 1500m:

l' = measured length of line = 1500 m

L = True designated length of tape = 20m

e = error = $\frac{0+10}{2}$ = 5cm = 0.05m.

L' = incorrect length of tape = 20.05m.

l_1 = True length = $\frac{L'}{L} * l'$ =

= $\frac{20.05}{20.00} * 1500$ = 1503.75 m

(5M)

(ii) for the next 1400m:

l' = 1400m, e = $\frac{10+18}{2}$ = 14 cm = 0.14m

L' = 20.14 m.

l_2 = $\frac{L'}{L} * l'$ = $\frac{20.14}{20.00} * 1400$ = 1409.80m

l = $l_1 + l_2$ = 1503.75 + 1409.80 = 2913.55m

(5m)

Qn #5. (i) Mention errors (1×5) = (5m)

(ii) Detailed explanation (1×5) = 5m

Qn #6. (i) any 2 differences (1×2) = (2m)

(ii) any 3 differences (1×3) = (3m)

(iii) 4 major differences (1×5) = (5m)

Qn #7. (i) plot the traverse : (2M)

$\alpha = 59^\circ 30'$, $\beta = 118^\circ 30'$, $\gamma = 256^\circ$

(1×3) = (3m)

$\theta = 20^\circ 30'$, $\delta = 85^\circ 30'$ (1 × 2) = (2m)

Apply check : $(2N-4) * 90^\circ = 540^\circ$. (3M)

End of scheme.