

SE Civil III CBSGS

Q.P. Code:18608

6.6.17

(3 Hours)

Maximum Marks: 80

- N.B. i) Question No.1 is compulsory. Attempt any three from remaining questions.
 ii) Assume any suitable data if required, state the same clearly.
 iii) Figures to the right indicate full marks.
 iv) Attempt sub questions in order.

1. Compare the following: (5x4=20)

- (i). Chain Survey and Compass survey.
 (ii). Trapezoidal rule and Prismoidal rule.
 (iii). Surveyor's compass and Prismatic compass.
 (iv). Rise and fall method and Plane of collimation method.

2.a. The following notes refer to the reciprocal levelling:

Instrument Station	Staff readings on		Remarks
	A	B	
A	1.030	1.63	Distance between A and B = 800m
B	0.950	1.54	R L of A is 440.

Find (i) the true R.L. of B. (ii) Combined corrections for curvature and refraction and Error in collimation adjustment of the instrument. (iii) (08)

2.b. Write a detailed note on obstacles in chain surveying. (07)

2.c. A line was measured with steel tape which was exactly 30m at a pull of 5kg and measured length was 229.62m. The pull applied during measurement was 10kg and the tape was uniformly supported. Find the true length of line if the cross-sectional area of tape was 0.02cm^2 and modulus of elasticity of tape material = $2.1 \times 10^6 \text{ kg/cm}^2$. (05)

3.a. Compare closed traverse and open traverse. (04)

3.b. Compare well-conditioned and ill conditioned triangle. (04)

3.c. What is a local attraction? Which are the methods of elimination of local attraction? (06)

3.d. Describe advantages and disadvantages of plane table survey. (06)

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6-5-17

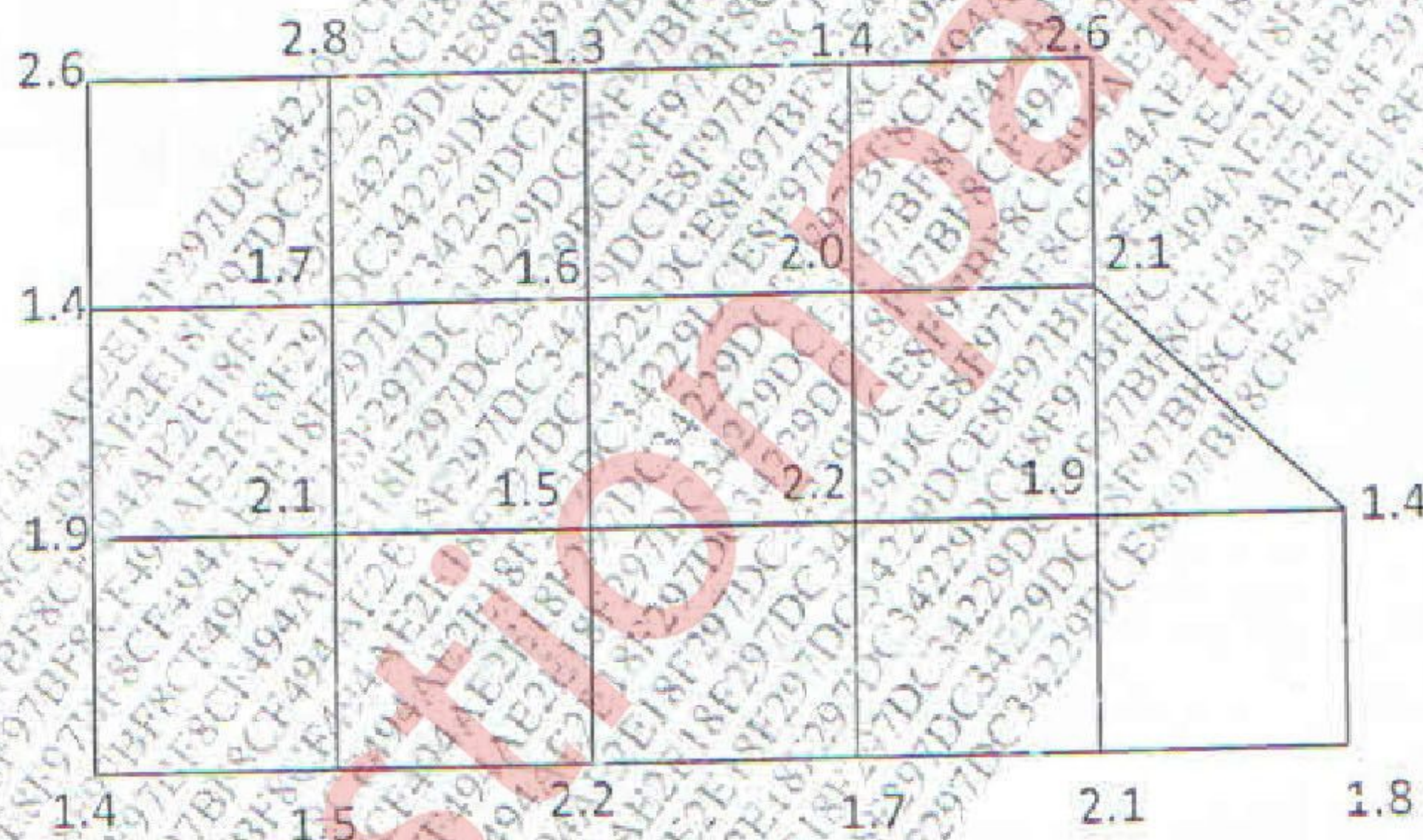
4.a. Calculate the included angles for the closed compass traverse ABCDA run clockwise from following data: (10)

Line	AB	BC	CD	DA
FB	40°	70°	210°	280°

4.b. Calculate the missing quantities for a theodolite survey of closed traverse ABCDA: (10)

Line	AB	BC	CD	DA
Length in m	550	1200	880	1050
Azimuth	60°	?	?	310°

5.a. Calculate the volume of earth removed for a piece of borrow pit shown. At the corners, the data mentioned is amount of cut in meters. Each square is 9m x 9m. (10)



5.b. Describe in detail procedure of taking bearing of a line with theodolite. (05)

5.c. Explain in detail the use of theodolite as a level (05)

6. a. Define contour. Explain the methods of interpolation of contours. (08)

6.b. Describe the working of Amsler's planimeter. (05)

6.c. Explain how the project of theodolite traversing is executed? (07)