B.E. / B.Tech. (Civil Engineering) Model Curriculum Semester-III

003 / PCC-CE303 - Surveying & Geomatics

P. Pages : 2 **GUG/W/24/13711**

Time : Three Hours * 5 3 8 6 * Max. Marks : 80

Notes : 1. All questions carry equal marks.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) The observed bearing of the line AB, BC, CD and DA are as follows. Find out the included angles. **8**

Line	Fore Bearing	Back Bearing
AB	46º 10′	226º 10′
BC	119º 20′	298º 40′
CD	169º 30′	351º 10′
DA	280º 20′	99º 20′

b) Define Surveying. Also state principle of Surveying. **4**

c) The distance between two points measure with 20 m chain was recorded as 327 m. It was afterward found that the chain was 3 cm too long. What was the true distance between the points. **4**

OR

2. a) The following staff reading were taken successfully with level, the instrument having been moved forward after second, fourth and eighth reading **8**

0.875, 1.235, 2.310, 1.385, 2.930, 3.125, 4.125, 0.120, 1.875, 2.030, 3.765

The first reading was taken on a benchmark of elevation 132.135, find all reduce levels.

b) Convert whole circle bearing to quadrantal bearing **4**

1) 64º 30′ 2) 136º 45′

3) 218º 15′ 4) 329º 0′

c) What is principle of plane table surveying? Explain orientation. **4**

3. a) What is temporary adjustment of a theodolite? **6**

b) Define Contouring. State characteristics of Contour. Also state uses of Contouring. **10**

OR

4. a) A tacheometer was set up at a station C and the following reading were obtained on a staff vertically held. **10**

Instru. Station	Staff station	Vertical angle	Hair Reading (m)	Remark
C	BM	$-5^{\circ}\ 20'$	1.50, 1.800, 2.450	RL of BM = 750.50 m
C	D	$+8^{\circ}\ 12'$	0.750, 1.500, 2.250	

Calculate the horizontal distance CD and RL of D, when the constants of instrument are 100 and 0.15.

b) What are the fundamental lines of theodolite? What should be the relation between them. **6**

5. a) What is triangulation? Give its classification. **8**

b) What is mean by strength of figure. **4**

c) What is phase correction. **4**

OR

6. a) What is Satellite station. Explain with neat sketch. **8**

b) Write a note on: **8**
1) Towers
2) Signals

7. a) A line AB 2000 m long, laying at an elevation of 500 m. measures 8.65 cm on a vertical photograph for which focal length is 20 cm. Determine scale of the photograph in an area, the average elevation of which is about 800 m. **8**

b) Explain vertical, tilted and oblique photographs. **8**

OR

8. a) Explain components of GIS state its uses. **10**

b) State the uses of photogrammetry. **6**

9. a) Explain the concept of global positioning system. Also state different navigation system. **8**

b) What is remote sensing? State importance and need of remote sensing. **8**

OR

10. Write note on **any four.** **16**

1) GPS
2) Remote Sensing
3) EDM
4) Total Station
5) GIS
6) Optical Theodolite

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