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

PCC-CE303 / 003 - Surveying & Geomatics

P. Pages : 2 **GUG/S/23/13711**

Time : Three Hours Max. Marks : 80

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

1. a) What is mean by local attraction? how it is detected. **4**

b) The length of line measure on a slope of 15º was recorded as 550m. But it was found that 20m chain was 0.05m too long. Calculate horizontal distance of line. **4**

c) The following are the bearing taken on a close compass traverse. **8**

Line	Fore Bearing	Back Bearing
AB	82º10'	259º0'
BC	120º20'	301º50'
CD	170º50'	350º50'
DE	230º10'	49º30'
EA	310º20'	130º15'

Compute the corrected bearing of all sides if the area is suspected by local attraction.

OR

2. a) What are basic principle of surveying? **4**

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

i) 64º30' ii) 136º45'

iii) 218º15' iv) 329º0'

c) The following staff readings 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 the all reduce levels.

3. a) What is the temporary adjustment of a theodolite? **4**

b) What is the principle of tacheometry? **3**

c) Write brief note on subtense bar. **4**

d) Write the characteristics of contour. **5**

OR

4. a) For the following traverse, compute length of line CD so that A, D & E may be in one straight line. **10**

Line	Length	Bearing
AB	110	83º 10'
BC	165	30º 12'
CD	?	346º06'
DE	212	16º18'

b) Explain fundamental lines and their relation of theodolite. **6**

5. a) What trilateration in triangulation. **4**

b) Give the classification of triangulation system. **4**

c) What are the factors considered in selection of triangulation stations. **4**

d) Explain the term "strength of figure". **4**

OR

6. a) What is satellite station in geodetic survey. **8**

b) Write note on: **8**

i) Towers ii) Signals

7. a) The scale of photograph is $10\,\text{cm} \times 100\,\text{cm}$. The photograph size is $23\,\text{cm} \times 23\,\text{cm}$. Determine the no. of photographs required to cover an area of $15\text{km} \times 10\text{km}$ if the longitude overlap is 60% and side overlap is 30% **10**

b) What are component of GIS. **6**

OR

8. a) State the uses of Photogrammetry. **8**

b) What are the application of GIS in civil engineering. **8**

9. a) State concept and uses of GPS. **8**

b) What is purpose of EDM and total station. **8**

OR

10. Write a short note on: **16**

i) Remote sensing ii) GPS

iii) Total station iv) EDM

v) Optical Theodolite

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