Sample Test Paper-I

Course Name	: **Diploma in Civil Engineering Group**	
Course Code	: **CE/CS/CR/CV**	**17419**
Semester	: **Fourth**	
Subject Title	: **Advance Surveying**	
Marks	: **25**	**Time: 1 Hours**

Instructions:

1. All questions are compulsory
2. Illustrate your answers with neat sketches wherever necessary
3. Figures to the right indicate full marks
4. Assume suitable data if necessary
5. Preferably, write the answers in sequential order

Q1. Attempt any THREE of the following   **09 Marks**

     a) Define contour interval and Horizontal equivalent

     b) Draw the following ground features by contour lines giving the values of contours-

         i) Valley   ii) Pond   iii) Overhanging Cliff

     c) Write the formula for calculation of area by Trapezoidal rule.

     d) State three component parts of polar planimeter and state their purpose.

Q2. Attempt any TWO of the following   **08 Marks**

     a) The following readings were recorded by a planimeter with the anchor point inside the figure.

         I.R. = 7.350   F.R. = 2.696   M = 100 cm^2 C = 23.520

         Calculate area of figure when it is observed that the zero mark of the dial passed the index mark once in anticlockwise direction.

     b) Describe digital planimeter with respect to – i) Component parts
         ii) Construction

     c) The following offsets were taken from a chain line to an irregular boundary line at an interval of 10m. Calculate area by trapezoidal rule. 0, 2.50, 3.50, 5.00, 4.60, 3.20, 0m

Q3. Attempt any TWO of the following.   **08 Marks**

     a) Describe method of block contouring with sketch.

     b) State four different uses of contour maps by giving an example in each case.

     c) What is the grade contour? Describe how is it located on the ground

Sample Test Paper-II

Course Name	: **Diploma in Civil Engineering Group**	
Course Code	: **CE/CS/CR/CV**	**17419**
Semester	: **Fourth**	
Subject Title	: **Advance Surveying**	
Marks	: **25**	**Time: 1 Hours**

Instructions:

1. All questions are compulsory

2. Illustrate your answers with neat sketches wherever necessary

3. Figures to the right indicate full marks

4. Assume suitable data if necessary

5. Preferably, write the answers in sequential order

Q1. Attempt any THREE of the following   **09 Marks**

     a) Define the terms 1) Changing Face, 2) Face Right, 3) Horizontal axis

     b) Write any Six components parts of Transit theodolite

     c) What is a tacheometer? State essential requirement of a tacheometer.

     d) What do you mean by transiting? What is the effect of transiting the theodolite?

Q2. Attempt any TWO of the following   **08 Marks**

     a) Describe procedure for measurement of horizontal angle by single observation (Direct Method)

     b) State the different methods of prolongation of a line. Describe any one.

     c) Write the relations between fundamental axes of a transil-theodolite.

Q3. Attempt any TWO of the following   **08 Marks**

     a) Find the length and bearing of line 'PQ'. The coordinates of point P and Q are given below.

Points	coordinates
P	975.50, 830.20
Q	1189.70 , 579.30

     b) A tachometer having constant 100 and 0.3 was setup at a station O and the following observations were taken by keeping the staff vertical and the line of sight horizontal.

Inst. Station	Staff Station	Hair Readings	

O	B.M.	1.375, 2.535, 2.830	RL of BM 100.000 m
	A	1.23, 1.535, 1.89	

Calculate the horizontal distance between O and A and RL of A.

c) State with neat sketch the principle of tacheometry.

Sample Question Paper

Course Name	: **Diploma in Civil Engineering Group**
Course Code	: **CE/CS/CR/CV**
Semester	: **Fourth**
Subject Title	: **Advance Surveying**
Marks	: **100**

17419

Time: 3 Hours

Instructions:

1. All questions are compulsory.

2. Illustrate your answers with neat sketches wherever necessary.

3. Figures to the right indicate full marks.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

Q1. (A) Attempt any SIX of the following   **12 Marks**

   a) Define Contour.

   b) Define contour interval and Horizontal equivalent

   c) Define is zero circle?

   d) State the fundamental axes of theodolite (Mention any two).

   e) Define the terms- I) Face Left   II) Transiting

   f) State the principle of tacheometry.

   g) Enlist any four component parts of Micro-optic theodolite and mention its purpose and functions.

   h) Define degree of curve.

Q1. (B)Attempt any TWO of the following   **08 Marks**

   a) State any four characteristics of Contours.

   b) State any two advantages and limitations of Remote sensing

   c) Describe procedure for measurement of magnetic bearing by transit theodolite.

Q2. Attempt any FOUR of the following 16 Marks

a) What are the different methods of contouring? Describe any one method along with a sketch. Write the situation where it will be useful.

b) Describe the method of establishing grade contour on ground.

c) Describe method of Interpolation of contour by arithmetical calculation.

d) Describe the method to measure the deflection angle by transit theodolite.

e) Explain the temporary adjustments of transit theodolite.

f) List the rules for balancing of Traverse and describe any one of them.

Q3. Attempt any FOUR of the following 16 Marks

a) State four component parts of a micro-optic theodolite and state their purposes.

b) Describe the temporary adjustment of digital level.

c) Describe the setup of the total station in eight steps.

d) Write any four features of Total station.

e) Show the following readings on Windows of micro-optic theodolite in measurement of horizontal and vertical angle.

I) Horizontal Angle = 110°30'15''

II) Vertical Angle = 75°25'10''

f) With the help of a neat sketch show the following elements on simple circular curve.
i) Back tangent ii) Forward Tangent   iii) Length of curve   iv) Length of long chord

Q4. Attempt any FOUR of the following 16 Marks

a) Write the procedure for measurement of area by polar planimeter.

b) State the application of remote sensing in civil engineering.

c) What is GPS? Explain functions of GPS.

d) State the field method for determining constants of tacheometry.

e) What is an anallatic lens? Write any two advantages of providing it in a tacheometer.

f) Derive the relation between the radius and degree of curve.

Q5. Attempt any TWO of the following 16 Marks
a) The following are lengths and bearings of the sides of a closed traverse ABCDA.

LINE	LENGTH	BEARING
AB	76.80	140°12'
BC	195.60	36°24'
CD	37.20	338°48'
DA	?	?

Find the length and bearing of line DA.

b) Write the steps involved in measurement of horizontal angle by repetition method. What errors are eliminated by this method.

c) A tacheometer was set-up at a station A and following readings were taken on a staff held vertically.

Instrument Station	Staff Station	Vertical Angle	Hair Reading	Remark
A	BM	8°	1.050,1.105,1.160	RL of BM=500m
A	B	-5°	0.950,1.055,1.160	

The constant of instrument was 100. The instrument was fitted with anallatic lens. Calculate the distance AB and R.L. of B.

Q6. Attempt any TWO of the following   16 Marks

a) The formation level of a road is at a constant R.L. of 150.00m. The ground level is along central line of road are as follows

Chainage (m)	0	40	80	120	160	200	240
Ground Level	152.60	151.90	149.00	150.90	151.50	152.45	151.20

Calculate the volume of earthwork. Given that formation width is 8m and side slope is 2:1.

b) Two straights meet at chainage 2250m. The deflection angle is 40°. Calculate the data necessary for setting out the curve of radius 300m to connect the two straights by the method of offsets from long chord.

c) Describe layout of small building by using total station.