

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV(OLD) – EXAMINATION – SUMMER 2019
Subject Code:140601
Date:17/05/2019
Subject Name: Advanced Surveying
Time:02:30 PM TO 05:00 PM
Total Marks: 70
Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Explain the procedure for finding the multiplying constant and additive constant in tachometric surveying. **07**
- (b)** The following observations were made using a tachometer fitted with an analytic lens, the multiplying constant being 100. Calculate the distance AB and RL of A and B. Find the gradient of the line AB. **07**

Inst. Station	H.I.	Staff station	W.C.B.	Vertical angle	Staff reading	remarks
O	1.550	A	30°30'	4°30'	1.155 , 1.755, 2.355	R.L. of O = 200.00 m
		B	75°30'	10°15'	1.250 , 2.000 , 2.750	

- Q.2 (a)** What is base line? How it is selected? Describe any one procedure of its extension. **07**
- (b)** Describe Principal of Triangulation and show schematically different sets / orders of triangulation Figures. **07**

OR

- (b)** Write short note on Total Station. State its applications in the field of civil engineering. **07**

- Q.3 (a)** What is the weight of a quantity? Discuss various laws of weights. **07**
- (b)** Determine the most probable value of the angles of triangles ABC, given by the following data. **07**

Angle	weight
A = 62° 14' 12"	1
B = 48° 12' 14"	3
C = 69° 33' 28"	2

OR

- Q.3 (a)** Define the following terms : **07**
 1- Longitude , 2- Celestial sphere, 3- Vertical circle, 4 - Visible horizon ,
 5 – Zenith, 6- Celestial equator, 7 - Nadir
- (b)** What are the various uses of aerial camera? Describe with neat sketch its essential parts. **07**
- Q.4 (a)** Write short note on Geospatial analysis. **07**

- (b) Two points A and B which appear in a vertical photograph taken from a camera having focal length of 220 mm and from an altitude of 2800 m, have their elevations as 500 m and 700 m respectively. Their corrected photo co-ordinates are as under 07

Point	Photo co-ordinate	
	x , mm	y, mm
a	+23.8	+16.4
b	-13.6	-29.7

Determine the length of the ground line AB.

OR

- Q.4** (a) What do you mean by GPS? Give an overview of GPS. Describe briefly the uses and applications of GPS. 07
- (b) Write the applications of GIS in civil engineering field. 07

- Q.5** (a) Write the basic principle of remote sensing? Discuss the components of remote sensing in brief. 07
- (b) Define GIS. Discuss the key components of GIS with figure. 07

OR

- Q.5** (a) Explain with sketch electromagnetic wave & spectrum. 07
- (b) Explain integration of remote sensing and GIS. 07

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