GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– IV EXAMINATION – SUMMER 2020

Subject Code: 2140601 **Date:27/10/2020**

Subject Name: ADVANCED SURVEYING

Time: 10:30 AM TO 01:00 PM **Total Marks: 70**

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

			MARKS
Q.1	**(a)**	Describe uses of Triangulation	**03**
	(b)	Derive the equation for numbers of photographs required to cover area	**04**
	(c)	Determine gradient form point P to Q from the observation table given below . The observations are taken from station O and Staff held vertical	**07**

Inst station	Staff station	Bearing	Vertical Angle	Staff reading
O	P	120^0	$+9^0 30^{'}$	1.25 1.855 2.350
O	Q	260^0	$+4^0 00^{'}$	0.995 1.770 2.680

Q.2	**(a)**	Give classification of sensors	**03**
	(b)	Explain Types of error	**04**
	(c)	Adjust the following angles closing the horizon A=$82^0 39^{'} 45^{''}$ Weight 1 B=$120^0 25^{'} 40^{''}$ Weight 4 C=$68^0 14^{'} 30^{''}$ Weight 3 D=$88^0 11^{'} 00^{''}$ Weight 2	**07**

OR

	(c)	Determine the scale of photograph for terrain laying at elevation of 110 m . If vertical photograph was taken at altitude of 1143 m . Take focal length of camera 20 cm . If the ground elevation is considered 50 m what will be the scale for that ?	**07**
Q.3	**(a)**	Give definitions of (i) Photo nadir point (ii) Swing	**03**
	(b)	Describe indivisibility of triangulation stations	**04**
	(c)	Explain components of remote sensing	**07**

OR

Q.3	**(a)**	Explain crab and drift	**03**
	(b)	Describe terms (i) Declination circle (ii) Prime vertical	**04**
	(c)	Explain principle of least square	**07**
Q.4	**(a)**	Enlist remote sensing platforms.	**03**
	(b)	Give application og GIS in Civil Engineering	**04**
	(c)	Describe Global positioning system	**07**

OR

Q.4	**(a)**	Enlist different signals and explain any one	**03**
	(b)	Describe spatial Information system and Non spatial Information system	**04**
	(c)	Describe key components of GIS	**07**

1

Q.5 **(a)** Describe site selection of base line.   **03**
  (b) Describe data structure   **04**
  (c) Derive equation for D and V when line of sight is inclined and staff held vertical   **07**

<div align="center">

OR

</div>

Q.5 **(a)** Give difference of Fixed hair method and movable hair method of tacheometry   **03**
  (b) Describe Image Interpretation techniques   **04**
  (c) Derive equation for scale of photograph   **07**

<div align="center">

****

</div>