

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (OLD) - EXAMINATION – SUMMER 2018

Subject Code:140601

Date:24/05/2018

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.

- Q.1** (a) What do you mean by geodetic surveying? How does it differ from plane surveying? **07**
- (b) Derive the expressions for horizontal and vertical distances by the stadia method when both the angles measured are those of elevation. **07**

- Q.2** (a) Discuss the field procedure elaborately for carrying out tacheometry survey in hilly area. **07**
- (b) Explain the tangential method of tacheometry. Derive the equation for horizontal and vertical distance when both the angles of measurement are those of depression. **07**

OR

- (b) Define triangulation. Discuss the criteria for selecting the base line. **07**
- Q.3** (a) What are the sources of error in tacheometry? **07**
- (b) A tacheometer was set up at a station C and the following readings were obtained on a staff vertically held. Calculate the horizontal distance CD and RL of D, when the constants are 100 and 0.15. **07**

Inst. stn	Staff stn	Vertical angle	Hair readings	Remark
C	BM	-5° 20'	1.500, 1.800, 2.450	RL of
C	D	+ 8° 12'	0.750, 1.500, 2.250	BM=750.50 m

OR

- Q.3** (a) What is azimuth? Explain different methods for determining azimuth of a survey line. **07**
- (b) What is overlap of photographs? Why it is required? **07**
- Q.4** (a) Explain stereoscopic vision and stereoscopic fusion. **07**
- (b) List out various types of EDM instruments and discuss elaborately about total station. **07**

OR

- Q.4** (a) What is spherical triangle? Also discuss the properties of a spherical triangle. **07**
- (b) Write short note on satellite station. **07**

- Q.5** (a) What is the basic principle of remote sensing? Discuss active and passive remote sensing with example. **07**
- (b) Explain the working principle of GPS. **07**

OR

- Q.5** (a) Explain the major objectives of GIS. Also discuss the key components of GIS. **07**
- (b) Discuss various applications of GIS and Remote sensing in Civil Engineering. **07**
