BICE-004

B. TECH. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

June, 2019

BICE-004 : ADVANCE SURVEYING

Time : 3 Hours   *Maximum Marks : 70*

Note : Attempt any seven questions. All questions carry equal marks. Use of scientific calculator is permitted.

1. What is Tacheometric Survey ? Explain the principle of stadia method.   10

2. (a) What do you understand by shoreline survey ?   3

   (b) Explain three point problem in hydrographic surveying. How is it solved mechanically ?   7

3. Explain tangential method for the following *two* cases :   10

   (i) When both angles are angles of elevation

   (ii) Both angles are angles of depression

4. A tacheometer is set up at an intermediate point on a traverse course PQ and the following observations are made on a vertically held staff :

Staff Station	Vertical angles	Staff intercept	Axial hair reading
P	– 6°20'	2.46	1.675
Q	+ 4°20'	1.86	1.880

The instrument is fitted with an anallactic lens and the constant is 100. Find the gradient of the line joining Station P and Q.   10

5. What is total station ? How will you use it in a control survey ?   10

6. What do you understand by precise levelling ? Explain about automatic laser level.   10

7. What do you understand by aerial photogrammetry and relief displacement ?   10

8. Why are transition curves provided at the ends of a circular curve ? Derive an expression for the length of a transition curve.   10

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9. What are the requirements of a site selected for a base line in triangulation survey ? What equipments are necessary to measure a base line accurately ? 10

10. (a) Discuss the various zones of the earth with a labelled neat sketch. 7

 (b) Define the following astronomical terms : 3

 (i) Celestrial Horizon

 (ii) Celestrial Equator