

B.TECH SEM – VI (2007 COURSE) (CIVIL ENGG.) :

WINTER - 2017

SUBJECT: ADVANCED SURVEYING

Day: **Monday**
Date: **20/11/2017**

W-2017-2499

Time: **10.00 AM TO 01.00 PM**
Max Marks: **80**

N.B:

- 1) **Q. No 1 and Q. No. 5** are **COMPULSORY**. Out of remaining questions attempt any **TWO** questions from Section-I and any **TWO** questions from Section-II.
 - 2) Section-I and Section-II should be written in **SEPARATE** answer books.
 - 3) Figures to the right indicate **FULL** marks.
 - 4) Use of electronic pocket **CALCULATOR** is allowed.
 - 5) Assume suitable data, if necessary.
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SECTION-I

- Q.1**
- a) What is primary triangulation? Explain in detail. **(05)**
 - b) What is meant by relief displacement? Derive the formula for relief displacement. **(05)**
 - c) State objectives of Hydrographic survey. **(04)**
- Q.2**
- a) State and derive principle of least square. **(07)**
 - b) Describe the procedure of adjustment of braced geodetic quadrilateral by approximate method. **(06)**
- Q.3**
- a) Explain flight planning for aerial survey. **(06)**
 - b) An aerial survey was planned for a retrain having an average elevation of 250 m above datum. A canal 500m in length was measured as 5 cm on one of the vertical photograph of this survey. The radial distances to the top and foot of tower in this photograph were 5.65 cm and 4.42cm respectively. Focal length of camera lens was 15cm. Calculate flying height and height of the tower. **(07)**
- Q.4**
- a) Explain with neat sketches any two methods of locating soundings by shore observations. **(05)**
 - b) Explain following terms with respect to total station. **(08)**
 - i) Remote elevation measurement.
 - ii) Missing line measurement
 - iii) Free stationing
 - iv) Co- ordinate measurement

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SECTION-II

- Q.5** a) Explain with a neat sketch ideal remote sensing system. (05)
b) State limitations of GIS. (04)
c) Explain absolute positioning technique of SBPS. (05)
- Q.6** a) Explain interaction of electromagnetic energy with objects on earth's surface. (05)
b) State and explain in brief remote sensing platforms. (04)
c) What is meant by spatial resolution? Explain. (04)
- Q.7** a) What is raster data model? State important features of it. (06)
b) State and explain types of data used In GIS. (04)
c) State any three limitations of GIS. (03)
- Q.8** a) Explain principle and working of differential GPS. (05)
b) State any four applications of GPS. (04)
c) State important limitations of GPS survey. (04)

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