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Total No. of Pages : 3

S.E. (Civil) (Part - II) (Semester - IV) Examination, April - 2016
SURVEYING - II (Revised)
Sub. Code : 63345

Day and Date : Wednesday, 20 - 04 - 2016 **Total Marks : 100**

Time : 10.30 a.m. to 01.30 p.m.

Instructions :
1) **Answer any THREE questions from EACH section.**
2) **Figures to the RIGHT indicate FULL marks.**
3) **Assume suitable data if NECESSARY and state them clearly.**
4) **Answers shall be supported by adequate sketches.**

SECTION - I

Q1) a) State all the systems of tacheometry. Derive expression for horizontal distance, reduced level of staff station for the staff held vertical when the line of sight is inclined upwards for a tacheometer. **[7]**

b) In order to determine the RL of station B two observation are taken by theodolite from station A-one to a BM other to station B. The observations are as under.

Instrument Station	Staff Station	Target	Vertical angle	Staff Reading	Remark
A	BM	Lower Upper	–10° –7°	0.655 2.655	RL of BM=250M
A	B	Lower Upper	+4°30' +6°30'	0.950 3.250	

Find the distance between BM and station B and also RL of station B. **[10]**

Q2) a) What is base line? State the points to be considered for selection of base line. **[5]**

b) Explain in detail satellite station and reduction to centre. **[8]**

c) Describe the uses of Total station. **[4]**

P.T.O.

Q3) Write a short note on (any four) : **[16]**

a) Tacheometric Contouring

b) Reduction of stadia notes

c) Signals and towers in triangulation

d) Astronomical triangle

e) Trilateration

Q4) a) Explain Altitute-Azimuth coordinate system. **[6]**

b) Explain the significance of Polaris in field astronomy. **[6]**

c) Define the terms declination and right ascension. **[4]**

SECTION - II

Q5) a) Define the terms : **[8]**

i) Point of intersection

ii) Deflection angle

iii) Long chord

iv) Apex Distance

b) A compound curve is made up of two arcs of radii 380 m and 520 m. The deflection angle of the compound curve is 105°and that of the first arc of radius 380 m is 58°. The chainage of point of curve is 848.55 m. Find the chainages of the point of intersection, point of compound curvature and point of tangency. **[9]**

Q6) a) Define the terms : **[8]**

i) Flying height

ii) Air base

iii) Principal point

iv) Fiducial Axis

b) Points P and Q have elevations of 600 m and 300 m respectively. The photographic coordinates of points P and Q were measured as P (35, 25) and Q (20,50) in mm. The photograph was taken with a camera having a focal length of 210 mm and from a flying altitude of 2500 m. Find the length of the line PQ. **[9]**

Q7) a) Write a detailed note on applications of Remote sensing. **[7]**

b) Explain the components of Geographical Information System. **[5]**

c) Write a brief note on applications of GPS in surveying. **[5]**

Q8) Write short notes on the following : **[16]**

a) Mirror stereoscope

b) Transition curve

c) Atmospheric windows

d) Photo theodolite