S -2001

Total No. of Pages :3

Seat No.	

S.E. (Civil) (Semester - III) Examination, December - 2015
SURVEYING - I (Revised)
Sub. Code : 63339

Day and Date :Wednesday, 09 - 12 - 2015 **Total Marks :100**

Time : 10.00 a.m. to 01.00 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) Explain theory of reciprocal leveling with suitable derivation. **[8]**

b) Define sensitivity and derive expression for its determination. **[8]**

Q2) a) Explain various methods for determination of planimeter constants. **[8]**

b) Following offsets from a traverse line to an irregular boundary were measured at points 5m apart. **[8]**

Chainage (m)	0	5	10	15	20	25	30	35
Offset	6.15	10.92	9.03	11.58	14.22	12.33	9.72	10.32

Calculate the area by trapezoidal rule and Simpsons rule.

Q3) a) What is the principle of plane table surveying? What is orientation of plane table? Explain different methods. **[8]**

b) Distinguish between plane and telescopic alidade. **[5]**

c) Explain intersection method of plane table survey with neat diagram. **[5]**

Q4) Write short note on : **[16]**

a) Auto level

b) Direct contouring

c) Two point problem

d) Characteristics of contour map

SECTION - II

Q5) a) Explain Repetition method of horizontal angle measurement with reference to

i) its applicability

ii) procedure and recording with relevant example

iii) Errors eliminated by this method **[2+4+2]**

b) Explain how would you set a right deflection angle of 46° 37' 20" using a Transit Theodolite. Support your explaination with a neat sketch. **[4]**

c) Explain spire test with reference to a Transit Theodolite. **[5]**

Q6) a) Discuss the methods available for distributing error in consecutive co-ordinates for a Theodolite traverse. **[7]**

b) The following are the particulars of a Theodolite traverse. Calculate the length and bearing of the line DA and also the angle $C\hat{D}A$. **[10]**

Line	Length in m	Bearings
AB	145.80	342°24'
BC	517.20	14°35'
CD	315.90	137° 20'

Q7) a) What are Ranges? Name different types of Ranges and their significance. **[5]**

b) Explain the procedure for carrying out preliminary survey for a new railway alignment. **[6]**

c) Explain with a neat sketch the method of transferring centre line alignment inside a tunnel. **[6]**

Q8) a) Describe the construction and use of Nautical Sextant. **[8]**

b) The top of a hill subtends an angle of 39° 28' at a point A near its foot and an angle of 53° 49' at a point B, 80 m from A towards the hill, the points A and B being in line with its top. Determine the height of the hill and the horizontal distance from A to the top of the hill, assuming the elevation of the instrument axis to be same for each setting. **[8]**