Seat No.

S.E. (Civil) (Semester - IV) Examination, December - 2015
SURVEYING - II (Rivised)
Sub. Code : 63345

Day and Date :Tuesday, 01 - 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) Describe the procedure of contouring a hill with the tacheometer. [6]

   b) Two distances of 50m and 130m were accurately measured out and the intercepts on the staff between the outer stadia wires were 0.448m and 1.194m respectively. Determine the constants of tacheometer. [6]

   c) Explain the principle of electronic distance measurement. [5]

Q2) a) The approximate lengths of AC and BC were 8250.7m and 10864.7m respectively. From satellite station S at 63.19m from the triangulation station C, the following directions were observed.

Angle ASB = 72°55'32"   Angle CSA = 62°46'58"

Calculate the angle ACB. The stations A and S are to the opposite sides of line CB. [10]

   b) Explain the necessity of the observations from a satellite station and the term reduction to centre. [7]

Q3) Write a short note on (any four) [16]
   a) Reduction of stadia notes.
   b) Signals and towers in triangulation.
   c) Total station
   d) Astronomical triangle
   e) Subtense bar

Q4) a) Explain declination-right ascension coordinate system. [6]

b) What is the purpose of field astronomy. [2]

c) Define the terms. [8]

    i) Zenith and nadir points

    ii) Sensible horizon

    iii) Visible horizon

    iv) Hour angle

SECTION - II

Q5) a) Describe the method of setting out a simple circular curve by Rankine's Method of deflection angles. [6]

b) Find the length of vertical curve connecting two grades +0.6% and –0.5%, where rate of change of grade is 0.1% per chain of 30m. [5]

c) Discuss the different methods of obtaining length of a Transition curve. [6]

Q6) a) What is a Photo-theodolite? How it is used in Terrsetrial photogrammetry? [6]

b) Calculate maximum number of photographs to provide a stereoscope cover for a fairly level area with following data. Scale of photography is 1:10,000; Area is 100 sq.km; Size of photograph 20 cm x 20 cm; Overlaps: Longitudinal 60% and Lateral 30%. [6]

c) Vertical photographs were taken from an aircraft flying at a height of 3600 m. The average altitude of the terrain was 100m. The focal length of camera lens is 15 cm. Calculate the scale of photography. [5]

Q7) a) Explain principle and classification of Remote sensing. [8]

b) Write a detailed note on Electromagnetic spectrum. [8]

Q8) a) Explain the following terms. [9]

i) Super-elevation

ii) Conjugate principle point

iii) Atmospheric windows

b) What is G.P.S.? Explain its application in CIVIL Engineering. [4]

c) What are the basic components of G.I.S. [4]

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