Seat
No.

S.E. (Civil) (Semester-III) (Revised)
Examination, May - 2017
SURVEYING - I
Sub. Code : 63339

Day and Date : Monday, 15-05-2017   Total Marks : 100
Time : 2.00 p.m. to 5.00 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)   Answer shall be supported by adequate sketches.

SECTION-I

Q1) a)   Describe in detail two peg method of permanent adjustment of dumpy
             level.   **[8]**

        b)   A dumpy level was set up and leveled with its eyepiece over a peg C.
             The height from the top of C at the center of the eyepiece was measured
             and found to be 1.246m. The staff reading on peg D was 0.892m. The
             instrument was then moved and set up at D. The height of the eyepiece
             above D was 1.362m. The reading on the staff held on the peg C was
             1.720m. Determine the true reduced level of the peg D if that of the peg
             C was 150.00m.   **[5]**

        c)   What are the special features in the construction of Auto level?   **[5]**

Q2) a)   A contour plan is to be prepared for a building site. State the factors you
             will consider for the choice of contour interval. What method you will
             adopt for contouring?   **[5]**

        b)   Explain the Simpson's and Trapezoidal rule to calculate area. What are
             the limitations of Simpson's rule.   **[5]**

        c)   What is meant by zero circle? Explain different methods for computing
             area of zero circle.   **[6]**

P.T.O.

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

b) Define two point problem. Explain the detailed procedure with a neat diagram for solving two point problem in the field. **[8]**

Q4) Write short notes on- **[16]**

a) Indirect methods of contouring.

b) Radiation and intersection method of plane table survey.

c) Capacity contouring.

d) Digital planimeter.

SECTION-II

Q5) a) Explain the method of repetition for horizontal angle measurement with reference to (i) its applicability (ii) field procedure and recording with an arbitrary example (iii) errors eliminated. **[2+4+2]**

b) Draw a neat sketch of vernier 'C' representing a vertical angle of $10° 20' 40''$ **[4]**

c) Describe the procedure of performing double plane method of Trignometrical leveling in the field. **[5]**

Q6) a) What do you understand by the term balancing a traverse. State the various rules available for this purpose. **[5]**

b) While traversing Rajarampuri, Kolhapur a closed traverse ABCDA was run. Due to obstructions, it was not possible to observe the bearings of lines BC and CD. Calculate the missing bearings. **[12]**

Line	AB	BC	CD	DA
Length in m	550	1200	880	1050
Whole circle bearing	60°	?	?	310°

Q7) a) Explain the different methods of locating sounding positions in Hydrographic surveying. **[6]**

b) Describe the construction and use of Ceylon Ghat Tracer. **[5]**

c) Explain the method of carrying out preliminary location survey in the case of a railway alignment. **[6]**

Q8) a) Enlist the fundamental lines of a Transit theodolite and also indicate the desired relationships amongst them. **[6]**

b) The horizontal distance between two stations A and B is 920 m. The vertical angle observed from A to vane at B at a height of 4 m is 08° 24′30″. An observation made to a staff held at a B.M. of R.L. 385.550 m was 2.850 m. Find the reduced level of B. **[5]**

c) Write a note on use of theodolite in tunnel surveying. **[5]**

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