



UF-8053
B. E. II (Sem. III) (Civil) Examination
May / June - 2012
Surveying
(New Course)

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

<p>नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : B. E. 2 (Sem. 3) (Civil)</p> <p>Name of the Subject : Surveying (NEW)</p> <p>Subject Code No. : 8 0 5 3 Section No. (1, 2,.....): Nil</p>	<p>Seat No. : □ □ □ □ □ □</p> <div style="border: 1px solid black; border-radius: 15px; height: 80px; display: flex; align-items: center; justify-content: center; margin-top: 10px;">Student's Signature</div>
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- (2) Figures to the right indicate full marks.
- (3) Draw neat and labelled sketch wherever necessary.
- (4) Assume suitable data if necessary and mention it clearly.

- 1 (a) Explain the following terms : (any five) 10
 - (i) Plane Tabling
 - (ii) Orientation in plane table
 - (iii) Deflection angle
 - (iv) Hydrographic survey
 - (v) Echo-sounder
 - (vi) Soundings
- (b) Answer the following : (any three) 15
 - (i) Enlist purposes of hydrographic survey
 - (ii) What is two point problem ? How is it solved ?
 - (iii) Explain in detail balancing of traverse.
 - (iv) Explain the procedure of setting up the plane table.
- (c) Explain the following with a neat diagram : (any two) 10
 - (i) Radiation methods of plane tabling.
 - (ii) Deflection angle method of traversing.
 - (iii) Closing error in case of closed traverse.

2 Solve the following : (any two)

(i) An incomplete closed traverse table is obtained as follows :

Line	Length(m)	Bearing
AB	235.10	338° 20'
BC	317.40	88° 22'
CD	215.00	167° 00'
DA	?	?

Calculate the length and bearing of line DA.

(ii) The lengths and bearings of the lines of a closed traverse are given below in table. Calculate the latitudes and departures of the lines and assign proper signs to them.

Line	AB	BC	CD	DA
Length(m)	156.6	178.1	234.7	203.2
Bearing	78° 42'	152° 30'	251° 20'	3° 43'

(iii) Explain latitude and departure of a line. Find the length and bearing of AB if coordinates A are 500.25 (Northing), 640.75 (Easting) and that of B are 840.78 (Northing), 315.60 (Easting).

3 Attempt any three :

15

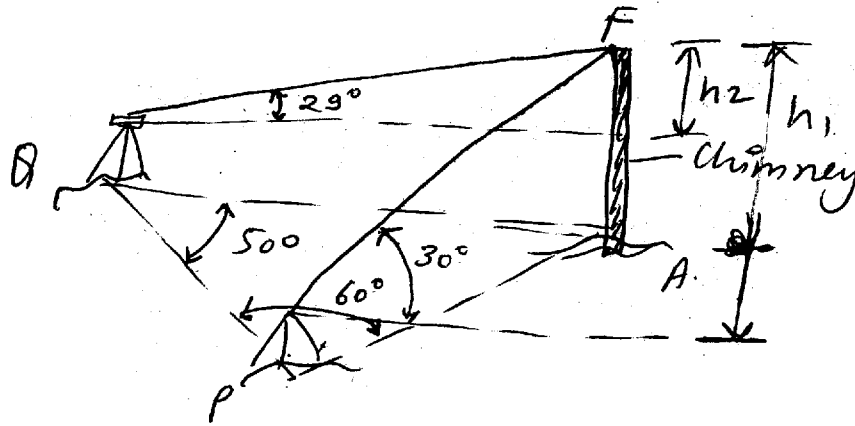
- Explain utility of curves ? What are commonly used shape of curves ? Write their classification.
- What factors should be considered during setting out works ? What are the general problems encountered ?
- What are various methods of calculating area from offsets ? Explain any one.
- Derive the equation for RL of top of an object when base of the object is accessible. The object may be vertical or inclined.
- Explain prismoidal formula or Simpson's rule for volume correction.

4 Write short notes on any five :

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- Digital Planimeter
- Vertical curves
- Transition curves
- Trigonometric levelling
- Boning Rod and Travelling rod
- Trapezoidal rule of volume calculation
- Axis signal correction

- 5 (a) To find the elevation of the top of a chimney, the following observations were made from two stations P & Q, 50 m apart. 8



RL of the line of collimation at P = 22.5 m
 R.L of the line of collimation at Q = 20.5 m.
 Determine the elevation of the top of the chimney.

OR

- (a) The following perpendicular offsets were taken from a chainline to an irregular boundary.

Chainage (m)	0	30	60	90	120	150	180	210
Offset lengths(m)	0	2.65	3.8	3.75	4.65	3.6	5.0	5.8

Calculate the area between the chain line and the irregular boundary by

- (i) average ordinate rule
 - (ii) Mid ordinate rule
- (b) Write the procedure of setting out
- (i) a building
 - (ii) a culvert.