Total No. of Questions—**8**] [Total No. of Printed Pages—**3**

Seat No.	

[5252]-504

S.E. Civil (I Semester) EXAMINATION, 2017

SURVEYING

(2015 COURSE)

Time : Two Hours **Maximum Marks : 50**

N.B. **:—** (*i*) Answer **Q.1** or **Q.2**, **Q.3** or **Q.4**, **Q.5** or **Q.6**, **Q.7** or **Q.8**.

(*ii*) Neat diagrams must be drawn wherever necessary.

(*iii*) Figures to the right indicate full marks.

(*iv*) Assume suitable data if necessary.

(*v*) Use of electronic pocket culculator is allowed in the examination.

(*vi*) Use of cell phone is prohibited in the examination hall.

1. (*a*) Explain the following with neat sketches :

(1) Quadrantal bearing

(2) Orientation by back sighting [6]

(*b*) The following records refers to an operation involving reciprocal leveling :

Instrument At	**Staff reading on** A	B	**Remarks**
A	2.255	3.795	Distance AB = 200.00 m.
B	1.005	2.705	RL of A = 500.500 m.

Find:-(1) The true reduced level of B.

(2) The combined correction for curvature and refraction.

(3) The collimation error.

(4) Whether the line of collimation is inclined upward or downward. [6]

P.T.O.

Or

2. (*a*) The following fore and back bearings were observed in traversing with a compass in place where Local Attraction was suspected. Find the corrected FB and BB of lines. Also calculate included angles. [6]

Line	**PQ**	**QR**	**RS**	**SP**
FB	124°30'	68°15'	310°30'	200°15'
BB	304°30'	246°00'	135°15'	17°45'

(*b*) Explain the following with neat sketches :

(1) Longitudinal Levelling

(2) Axis of Level Tube

(3) Contour Interval [6]

3. (*a*) Explain the following technical terms :

(1) Face Left

(2) Swinging Right

(3) Departure [6]

(*b*) The following observations were made on vartically held staff with a Tachometer fitted with an anallactic lens. Find the level difference between P and Q. [6]

Instrument station	Staff station	Vertical angle	Hair readings (m)	Remarks
O	P	+5º00'	0.850, 1.30, 1.50	R.L. of
	Q	+10º00'	0.70, 0.95, 1.15	point P is 200 m

Or

4. (*a*) Explain the following technical terms with sketch if necessary :

(1) Tacheometry

(2) Stadia diaphragm

(3) Additive constant [6]

(*b*) The following are the length and bearings of the sides of a traverse ABCD. Compute the length and bearing of the line DA. [6]

Line	Length (m)	Bearing
AB	485	341°15'
BC	1725	16°30'
CD	1050	142°00'

5. (*a*) Define Curve. Explain various elements of curves. [7]

(*b*) Two straights AB and BC intersect at a chainage of 2550 m. The angle of intersection is 120°. It is required to set out a 5° simple circular curve to connect the straights. Calculate all data necessary to set out the curve by the method of offsets from the chord produced with an interval of 30 m. [6]

Or

6. (*a*) Classify the different types of curves. Explain the method of setting curve by offset from chord produced. [7]

(*b*) Two straights AB and BC intersect at a chainage of 2550 m. The angle of deflection is 50°. It is required to set out a 5° simple circular curve to connect the straights. Calculate all data necessary to set out the curve by the method of offsets from the chord produced with an interval of 30 M. [6]

7. (*a*) Explain with sketch the significance of horizontal and vertical control in building construction. [7]

(*b*) Write a short note on GAGAN with any *four* points and a sketch. [6]

Or

8. (*a*) Describe the procedure of setting out drainage line with sketch. [7]

(*b*) Explain the salient features of GLONASS. [6]