COLLEGE OF ENGINEERING, PUNE

(An Autonomous Institute of Government of Maharashtra.)
SHIVAJI NAGAR, PUNE - 411 005

END Semester Examination

(CE-09004) Advanced Surveying

Course: B.Tech Branch: Civil Engineering

Semester: Sem V

Year: 2014-2015 Max.Marks:60

Duration: 3 Hours Time:- 2:00pm to 5:00 pm **Date: 23/11/14**

Instructions: **MIS No.** | | | | | | | | | | |

1. Figures to the right indicate the full marks.
2. Mobile phones and programmable calculators are strictly prohibited.
3. Writing anything on question paper is not allowed.
4. Exchange/Sharing of anything like stationery, calculator is not allowed.
5. Assume suitable data if necessary.
6. Write your MIS Number on Question Paper

Q.1 A Define the following terms 05

i) Conditioned equation
ii) Weight of an observation
iii) Most probable value
iv) Mistake
v) Spherical excess

B Find the probable values of angles P, Q, and R using the given data. 05
The weights of the observations are given in brackets.

$P = 70^0 31' 18.6"$ (3) $Q = 61^0 12' 9.8"$ (2)
$R = 112^0 41' 31.6"$ (4) $P + Q = 131^0 43' 20.6"$ (2)
$Q + R = 173^0 53' 36.2"$ (2) $P + Q + R = 244^0 24' 54"$ (1)

Q.2 A Explain with neat sketch fathometer and its use in accessing amount of silt deposition in the water body. 05

	B	The following angles were measured in a geodetic triangle: P= $72^0$18'33.76" (3) Q= $64^0$32'18.42" (2) R = $43^0$09'13.18" (1) Side p, opposite angle P, is 54189.75 m long. Correct the angles and find the lengths of the other two sides.	05
Q.3	A	Write difference between absolute positioning and relative positioning	05
	B.	Write short notes on Flight planning and define principal point and photo nadir.	05
Q.4	A.	What is meant by side equation? State the equation of condition which must be satisfied in adjustment of geodetic quadrilateral without central station.	05
	B.	A vertical photograph of a flat area having an average elevation of 250 m above MSL was taken with a camera having focal length of 20 cm. A section line AB, 250m long in the area, measures 8.50 cm on the photograph. A tower TB in the area also appears on the photograph. The distance between the images of top and bottom of the tower measures 0.46 cm on the photograph. The distance of the image of the top of the tower is 6.46 cm. Determine height of the tower.	05
Q.5	A	Derive an expression for phase of signal when bright portion is bisected.	05
	B.	Define relief displacement. Derive an equation to determine the height of an object above its foot from aerial photograph with the help of relief displacement.	05
Q.6		Explain the following with sketches (Any two) i) Mirror Stereoscope ii) Distomat iii) Difference between ideal remote sensing and real remote sensing systems	10