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III SEMESTER B.TECH. (CIVIL ENGINEERING)
END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: BASICS OF SURVEYING [CIE 2104]

REVISED CREDIT SYSTEM

(02/12/2016)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Missing data may be suitable assumed.

1A.	Explain various tape corrections	**03**	**CO1**
1B.	Define the following: i) Offset ii) Geodetic surveying iii) Geographical survey iv) Check lines	**02**	**CO1**
1C.	Two cross sections AS and CD, each perpendicular to the base line 250m length are established for measuring the velocity of flowing water in a river. When the float was on the section AS, the angle AES measured from a point E on the base line, 100m from A, was 50°30'40" and the angle CEO was 45°35'20". If the time taken by the float to travel the distance SO was 90 seconds, calculate the velocity of water.	**05**	**CO1**
2A.	In order to fix a point F, exactly midway between A and E, a traverse was run As follows: Line / Length(m) / Bearing AB / 400 / 30° BC / 500 / 0° CD / 600 / 300° DE / 400 / 30° Assuming point A as origin, calculate: i) The independent coordinates of points C, E and F ii) The length and bearing of CF	**05**	**CO2**
2B.	Differentiate between prismatic and surveyor compass	**05**	**CO2**
3A.	Explain the different methods of interpolation of contours. State the suitability of each one of them	**06**	**CO1**
3B.	What are the different methods of plane table surveying? Explain the suitability of each of them.	**04**	**CO2**
4A.	The staff readings taken during a levelling operation are given below: 1.355, 1.605, 2.125, 0.685, 1.365, 2.015, 1.355, -1.385, 0.685, 2.105, 1.685, 1.55, 1.105, 2.015, 1.085, 1.345, 1.355, -2.015, 1.305, 1.655, 1.685, 1.455. The Instrument was shifted after 5th, 10th, 14th and 19th readings. Arrange the data	**06**	**CO3**

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	and find the RLs of the points if the 12th reading was taken to a BM of RL 185.635m. (Note: -ve sign for readings indicate the staff is inverted). Adopt Height of collimation method.		
4B.	Define the following in detail i) Differential levelling ii) Check levelling iii) Profile levelling iv) Reciprocal levelling	**04**	**CO3**
5A.	To find the elevation of the top of a chimney the following observations were made from two stations P and Q 50 m apart. Horizontal angle at station P between chimney and 0=60° Horizontal angle at station Q between chimney and P=50° Angle of elevation from P to the top of the chimney=30° Angle of elevation from Q to the top of the chimney=29° RL of the line of collimation at P=22.5m RL of line of collimation at Q= 20.5m Determine the elevation of the top of the chimney.	**07**	**CO3**
5B.	Explain the following terms: (i) Face left (ii) Swinging the telescope (iii) Horizontal axis	**03**	**CO3**