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MANIPAL INSTITUTE OF TECHNOLOGY MANIPAL

(A constituent institution of MAHE, Manipal)

IV SEMESTER B.TECH. (CIVIL ENGINEERING) END SEMESTER EXAMINATIONS, APRIL/MAY 2018 SUBJECT: APPLIED SURVEYING [CIE 2204] REVISED CREDIT SYSTEM

(27/ 04/ 2018)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ✤ Answer ALLthe questions.
- ✤ Missing data may be suitably assumed.

Q.No		Marks	CO
1A.	Explain the stadia method to determining the horizontal and vertical distances when the staff id held to the line of sight and line of sight inclined.	4	1
1 B .	Explain the tangential method of solving the horizontal and vertical distances in all the cases.	6	1
2A.	Explain the principle of terrestrial photogrammetry and mention the prerequisites of terrestrial photogrammetry. Also define the following terms: i) Principle plane ii) Camera axis	3	3
2B.	Explain various methods to obtain the flying height of a vertical photogram?	3	3
2C.	A chimney 120 m high appears at the principal point of a vertical photograph. On the next vertical photograph, taken shortly after the base of the chimney is on the X axis and 82.5mm to the left of the principal point. The photographs are 200mmx200mm. The flying height of the aircraft was 780m. The focal length of the camera is 125mm. Determine; a) Distance of the top of the chimney from the Y axis on the second photograph and b) The percentage overlap between the two photographs.	4	3
3A.	Describe degree of curvature with respect to Arc definition and Chord definition.	2	2
3B.	Two tangents intersect at the chainage 1190m, the deflection angle being 36°. Calculate all the data necessary for setting out a circular curve with radius of 300m by deflection angle method. The peg interval is 30m.	4	2
3C.	Explain the various methods of determining the length of transition curve.	4	2
4A.	Two straights AB and CD intersect at V. BD is the common tangent of length 200 m. It is propose to introduce a reverse curve consisting of two arcs of equal radii between them. The angles ABD and CDB are 150° 30' and 43° 42' respectivc1y. Calculate i) the common radius, ii) the chainages of PC, PRC and PT., if that of B is 9245.2m.	4	2
4B.	Differentiate between Bridge and Culvert. And Explain the method of setting out Culvert with a neat diagram	3	2

4C.	Write a short note on working principle of Electronic Distance Measurement.	3	3
5A.	What are the applications of Underground Surveying? Explain with a neat diagram Weisbach's Triangle method of transferring Alignment to the Underground.	4	3
5B.	What is sounding in Hydrographic Surveying? Explain briefly various Sounding Equipment	3	3
5C.	Explain the method of locating the sounding by taking observations from sounding Boat.	3	3