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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY
WAKNAGHAT

TEST 2 EXAMINATION -2018
B. Tech. 4th Semester (Civil Engineering)

Course Code: 10 B11CE412 **Max. Marks: 25**
Course Name: Surveying **Max. Time: 1.5 hrs**
Course credit: 4

Note: All questions are compulsory. Carrying of mobile phone during examination will be treated as case of unfair means. Assume suitable data if required. Notation has its usual meaning.

Q1. Answer the following. **[CO2, CO5]**

a) What is the principle of plane tabling? Name the different instrument used for plane tabling. **[1]**
b) How will you perform the leveling operations when BM is above the line of collimation? **[1]**
c) What is curvature error? How it is corrected? **[1]**
d) How will you perform orientation operation in plane tabling? **[2]**
e) How will you perform a leveling operation across a wall? **[2]**

Q2. What do you understand by sensitiveness of bubble tube? The reading taken on a staff 100 m from the instrument with the bubble central was 1.872 m. The bubble is then moved 5 divisions out of the centre, and the staff reading is observed to be 1.906 m. Find the angular value of one division of the bubble and the radius of curvature of the bubble tube. **[CO2]** **[1+2]**

Q3. A steel tape 20 m long is standardized at 55°F with a pull of 25Kg and used for measuring a base line. Find the correction per tape length, if the temperature at the time of measurement was 80°F and the pull executed was 38Kg. Unit weight of steel is 7.86 g/cc, wt of tape is 0.8Kg and E= 2.11 X 106 Kg/cm2. Coefficient of thermal expansion is 6 X 10-6 per °F. **[CO6]** **[3]**

Q4. A 20 m chain was found to be 6 cm too long after chaining a distance of 3800 m. it was tested again at the end of day's work and found to be 9 cm too long after chaining a total distance of 7000m. If the chain was correct before the commencement of the work, find the true distance? **[CO6]** **[3]**

Q5. Explain the various characteristic of contours with neat sketch. **[CO2]** **[4]**

Q6. In running a fly levels from a B M of R L 250 m, the following readings (in m) were obtained.

Back sight:	1.315	2.035	1.98	2.625
Fore sight:	1.15	3.45	2.255	

From the last position of the instrument, five pegs at 20 m interval are to be set out on a uniform rising gradient of 1 in 40. The first peg is to have a R L of 248.1 m. Workout the staff reading required for setting the tops of the pegs on the given gradient. **[CO4]** **[5]**