

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATIONS-2022

B.Tech-III Semester (Civil)

COURSE CODE (CREDITS): 18B11CE312(3)

MAX. MARKS: 15

COURSE NAME: SURVEYING

COURSE INSTRUCTORS: Dr. Ashish Kumar

MAX. TIME: 1 Hour

*Note: All questions are compulsory. Marks are indicated against each question in square brackets.*

**Q1. Answer the following briefly.**

- a) What is hypotenusal allowance? What is its significance in Chain surveying? (CO-1) [1]
- b) Suppose you are asked to conduct a chain survey in crowded town. What would you say? (CO-1) [1]
- c) Determine the scale of plan and RF if a line of 200 m long is represented by 10 cm on a plan. (CO-1) [1]
- d) Differentiate between Quadrantal bearing system and whole circle bearing system. (CO-2) [1]

**Q2.** A tape of length 30 m weighs 0.12 N/m. it measures correctly when supported throughout under a tension of 85 N, and at a temperature of 20° c. What will be the temperature and sag correction when field condition are as follows: temperature = 35°c, Tension in the chain is 100 N. Take Coefficient of thermal expansion is  $6 \times 10^{-5}$  per °c. (CO-6) [3]

**Q3.** The area of the plan of an old survey plotted to a scale of 10 m to 1 cm now measures as 100.2 cm<sup>2</sup> as found by planimeter. The plan is found to have shrunk, so that a line originally 10 cm long now measures 9.7 cm only. Find the shrinkage factor, shrunk scale and true area of the survey. (CO-1) [3]

**Q4.** Determine the value of included angles in the closed traverse ABCD conducted in clockwise direction. The bearing of lines is given below. (CO-2) [3]

Line	F B
AB	40°
BC	70°
CD	210°
DA	280°

**Q5.** How will you perform a chaining operation when vision is free but chaining is obstructed? Explain the procedure briefly. (CO-1) [2]