Graphic Era
HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

Term Evaluation (Odd) Semester Examination September 2025

Roll no.....

Name of the Course: Diploma (Engineering)
Semester: III
Name of the Paper: Surveying
Paper Code: DTCE301

Time: 1.5 hour **Maximum Marks: 50**

Note:
(i) Answer all the questions by choosing any one of the sub-questions
(ii) Each question carries 10 marks.

Q1. (10 Marks)
a. Explain the principles of surveying with suitable examples. CO1

OR

b. Explain the classification of surveys based on instruments used with examples. CO1

Q2. (10 Marks)
a. Differentiate between plain surveying and geodetic surveying with neat sketches. CO1

OR

b. Classify surveying based on methods and give one real-life application for each. CO1

Q3. (10 Marks)
a. Define a surveying chain. List of different types of chains used in chain surveying. CO2

OR

b. What are the sources of error in chaining? What precautions would you take to guard against them? CO2

Q4. (10 Marks)
a. Explain the principle of chain survey. Draw a neat sketch showing main stations, subsidiary stations, tie stations, main survey line, base line, check line, and tie line. CO2

OR

b. Distance between two stations when measured with 20 m Chain was 1423 m. It was afterward found that the chain was 10cm too long. Calculate true distance between two stations. CO2

Q5. (10 Marks)
a. Describe the process of chaining on sloping ground and the methods used to measure distances in such conditions. CO2

OR

b. A 20 m steel tape was standardized on flat ground, at a temperature of 20°C and under a pull of 15 kg. The tape was used in centenary at a temperature of 30°C and under a pull of P kg. The cross-sectional area of the tape is $0.22cm^2$, and its total weight is 400g. The young's modulus and coefficient of linear expansion of steel are $2.1x10^6$ kg/cm^2 and $11x10^{-6}$ per °C respectively. Find the correct horizontal distance if P is equal to 10 kg. CO2