

LNCT UNIVERSITY, BHOPAL

Enrolment No.

CS-105

B.TECH I & II SEMESTER EXAMINATION [DEC-2024] CIVIL ENGINEERING & MECHANICS

Maximum Marks:70

Time Allowed :3Hours

Note: -Attempt all questions. Internal choices are given.

(SECTION -A)

1. Short Answer Type Questions(Attempt Any Five) [5x6=30]

- i) What do you understand by the term "Workability of concrete"? Also explain properties of good quality bricks.
- ii) What do you understand by "Surveying"? Also explain "EDM".
- iii) What do you understand by reciprocal levelling? Explain reciprocal levelling.
- iv) What is Smart Parking, and how does IoT contribute to its implementation?
- v) Define method of joint and method of section to analyze a plane truss with suitable example.
- i) Define "Free Body Diagram". Also explain Bow's notation.
- i) Draw SFD and BMD for a simply supported beam of span 6m, subjected to a UDL of 5kN/m over its entire length.

(SECTION -B)

2 Long Answer Type Questions (Attempt Any Four) [4x10=40]

- i. List of various field and laboratory test of cement. Discuss any two tests in detail.
- ii. Explain about the different types of stair case used in building construction with a neat sketch.
- iii. Draw a neat sketch of "Theodolite" with its nomenclature of all parts.
- iv. Discuss the integration of electronic surveying instruments and IoT sensors in real-time construction management and project safety platforms.
- v. A truss consists of 5 members and is subjected to a 500 N vertical load at one joint. Analyze the truss using the Method of Sections to find the forces in two specific members.
- vi. Deduce an expression of moment of inertia of rectangular plane lamina about its centroidal axes which is parallel to its base.
