LNCT UNIVERSITY

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Enrolment No..... Class Roll No.....

Second Mid Semester Examination, January 2024

(CS-204) Mechanical Engineering

Branch- CSE, II Semester

Time 1:30 Hrs ***Max. Marks 20***

Note: Attempt <u>All</u> questions. All questions carry equal marks.

Q.1 What is the principle of working of a vernier scale? *(5marks)*

OR

A carnot cycle operates between source and sink temperature of 250°C and -15°C. If the system receives 90 kJ from the source, find i) Efficiency (ii) The net work transfer (iii) Heat rejected to sink.

Q.2 What are the limitations of first law of thermodynamics. State and Explain the second law of thermodynamic. *(5marks)*

OR

Determine the amount of heat required to generate 5 kg of steam at a pressure of 10 bar and temperature 250° C from water at 25° C. Assume specific heat of superheated stem 2.1 kJ/kgK.
At 10 bar, hg = 2776.2 kJ/kg, ts= 179.88° C.

Q.3 State and Derive the Bernoulli's equation. *(5marks)*

OR