



# THE NEW ZEALAND GAZETTE EXTRAORDINARY

*Published by Authority*

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WELLINGTON: MONDAY, 22 FEBRUARY 1982

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*Proroguing the General Assembly*

DAVID BEATTIE, Governor-General

## A PROCLAMATION

PURSUANT to the New Zealand Constitution Act 1852, I, The Honourable Sir David Stuart Beattie, Governor-General of New Zealand, hereby prorogue the General Assembly of New Zealand until Thursday, the 27th day of May 1982.

Given under the hand of His Excellency the Governor-General, and issued under the Seal of New Zealand, this 17th day of February 1982.

[L.S.]

R. D. MULDOON, Prime Minister.

GOD SAVE THE QUEEN!

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

CHICAGO, ILLINOIS

DEPARTMENT OF PHYSICS

PHYSICS 310

LECTURE 10

STATISTICAL MECHANICS

The first part of the lecture is devoted to a review of the basic concepts of statistical mechanics. We begin with the microcanonical ensemble, where the total energy, volume, and number of particles are fixed. The central quantity is the microcanonical entropy, which is defined as the logarithm of the number of microstates accessible to the system. This leads to the microcanonical equation of state, which relates the temperature to the energy and volume of the system. We then discuss the canonical ensemble, where the system is in contact with a heat reservoir at a fixed temperature. The partition function is introduced as a central quantity, and it is shown how it can be used to calculate all the thermodynamic properties of the system. The lecture concludes with a discussion of the grand canonical ensemble, where the system is in contact with both a heat reservoir and a particle reservoir. The grand partition function is introduced, and it is shown how it can be used to calculate the thermodynamic properties of the system in the presence of a chemical potential.

LECTURE 10

10/10

STATISTICAL MECHANICS