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SECTION D — (2 × 10 = 20 marks)

Answer ALL the questions, choosing either (a) or (b).

21. (a) Define Poisson brackets. Obtain the equation of motion in Poisson bracket notation.

Or

(b) Discuss in detail the free vibrations of a triatomic molecule and obtain the expression for normal frequencies.

22. (a) Employing M.B. distribution obtain an expression for the energy of a harmonic oscillator. Write a note on the specific heat of perfect gases.

Or

(b) Outline the theory of electrons in metals considering the degenerate case.