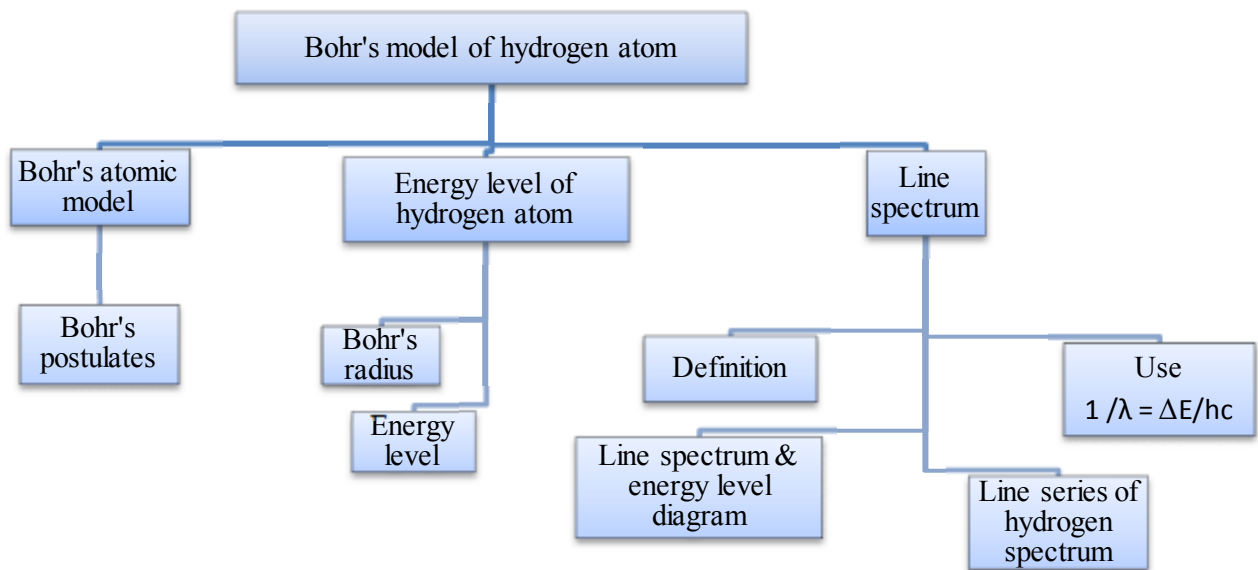


CHAPTER 27 BOHR'S MODEL OF HYDROGEN ATOM



INTRODUCTION

This chapter will introduce the theory of atomic structure that was complemented by Neils Bohr and discuss the hydrogen atom from the quantum mechanics point of view.

IMPORTANT DEFINITIONS, CONCEPTS AND LAWS

Ionisation energy

The energy that must be supplied to liberate the electron from the atom when the electron is in the ground state.

Excitation energy

The energy that must be supplied to the atom to raise the electron from the ground state to an excited state.

Ground state

The lowest energy level correspond to $n = 1$.

Excited state

The higher level of energy correspond to $n = 2, 3...$

Bohr's radius

Bohr's radius (0.0529 nm @ 0.53 Å) is the minimum radius of an orbit can have for hydrogen atom in its lowest energy state.

Line spectrum

When a low pressure gas (hydrogen, neon etc) in sealed tube is subjected to an electric discharge using electrodes between the tube, it will emits electromagnetic waves. The individual wavelengths emitted by the gas can be separated (using grating spectroscopy) and identified as a series of bright fringes (line spectrum). Each line represents the information of the electron transition.