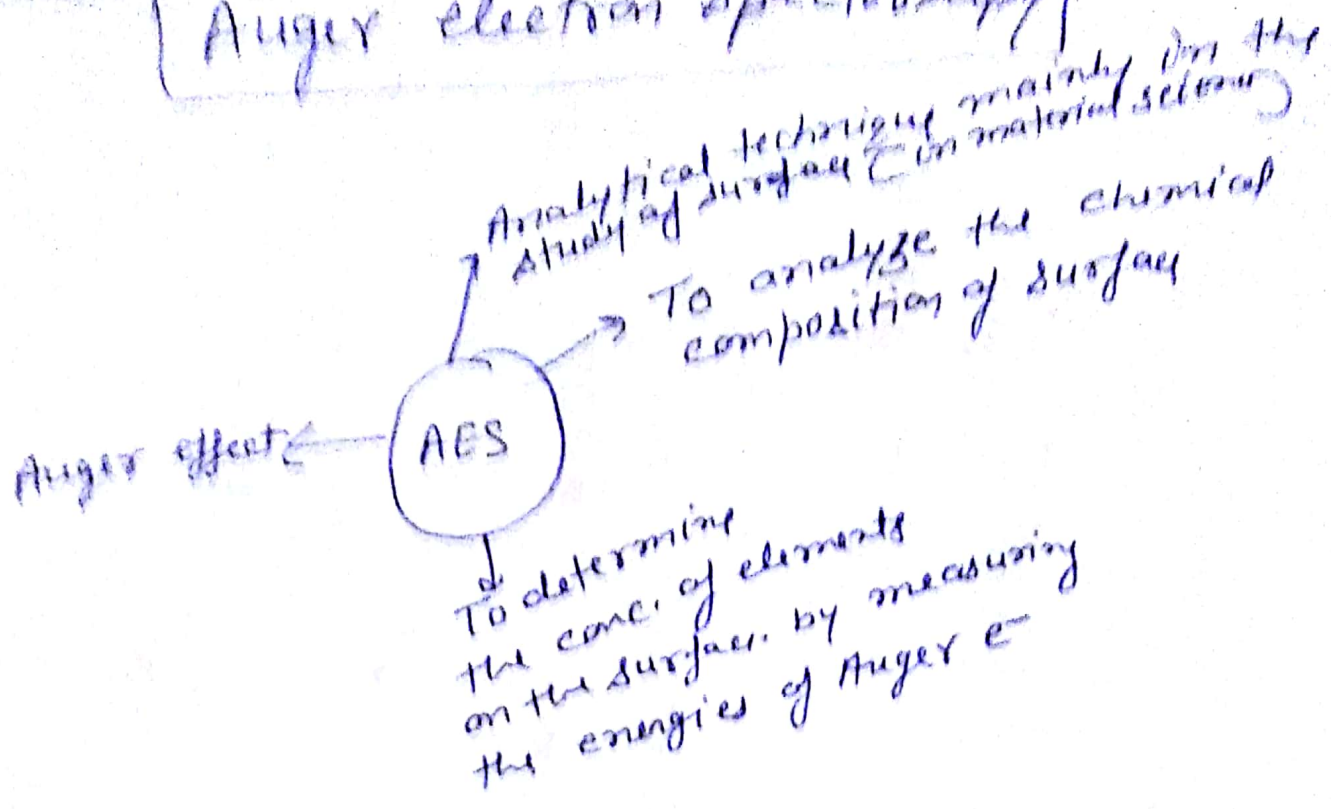


Auger electron spectroscopy



⇒ Auger effect → Physical phenomenon in which the filling of an inner shell vacancy of an atom is accompanied by the emission of an e^- from the same atom.

⇒ AES involves 3 basic steps—

- Atomic ionization (by removal of a core e^- from K shell e^-)

Relaxation
of
Auger
emission

- Electron emission (Auger process)

- Analysis of the emitted Auger e^-

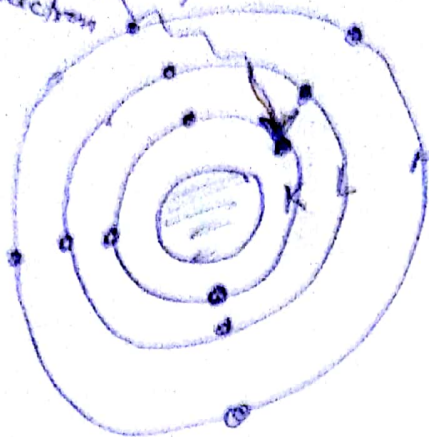
③

①

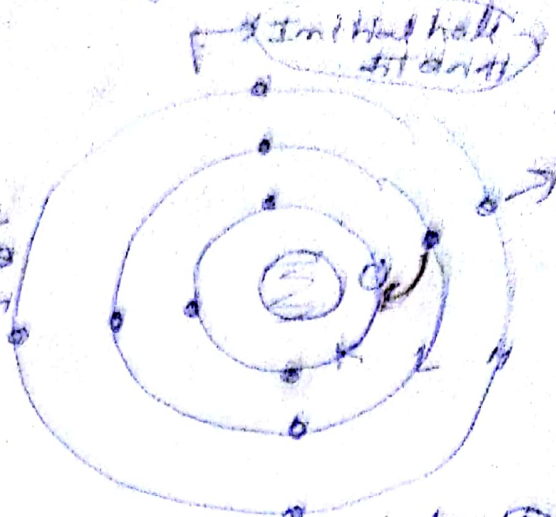
Ionization $\rightarrow$ core hole $\&$ e^- out
i.e. removal of K-shell e^-

beam
X-ray

high energy
electron



e^- impact
Ionization



Ionized atom (A)

highly excited
state $\&$ SE

possess $\&$ energy
liberated $\&$ e^-

$\&$ this energy is simulta-
neously transferred to II e^-

② Relaxation $\&$ Auger emission

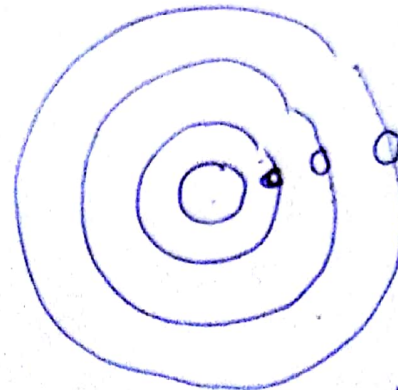
energy obtained

from Auger e^- not
from state

(A) $\rightarrow$ It is in highly excited state $\&$ will rapidly
relax back to a lower energy state by
one of 2 routes $\rightarrow$ X-ray fluorescence
OR

Auger emission (used)

(A) $\rightarrow$



Auger electron

final (doubly ionized atom)

